

RYERSON UNIVERSITY

Ted Rogers School of Information Technology Management
And G. Raymond Chang School of Continuing Education

(C)ITM 805 – Special Topics in ITM Infrastructure

COURSE OUTLINE FOR 2020-2021

1.0 PREREQUISITE(S)

The prerequisite for this course is (C)ITM 820. Students who do not have the prerequisite will be dropped from the course.

2.0 INSTRUCTOR INFORMATION

- Name:
- E-mail address:
- Faculty/course web site(s):
- Office Location & Consultation hours: Online and by appointment
 - Your instructor is available for virtual consultation during scheduled consultation hours. Information on the consultation format is provided in the D2L course shell. If you wish to make an appointment, kindly do so via email to ensure the professor is available.
- E-mail Usage & Limits:

Students are expected to monitor and retrieve messages and information sent through D2L and Ryerson email on a frequent and consistent basis. In accordance with the policy on Ryerson student email accounts ([Policy 157](#)), Ryerson requires that any electronic communication by students to Ryerson faculty or staff be sent from their official Ryerson email account. Messages from other accounts may be disregarded.

In class discussions, office hours, and D2L discussion boards are where most questions will be answered.

Therefore, email communication should be kept at a minimum and only for topics NOT addressed in class or in D2L.

Emails should contain 'ITM 805' in their subject.

Only emails that are about topics *not* already addressed in class will be responded and they will be responded within 24 business hours.

Commented [A(M1): Time will be TBA until teaching schedules are released.

3.0 CALENDAR COURSE DESCRIPTION

This course takes a deep dive into Information Security from an enterprise perspective including the technology, operational procedures, and management practices needed for successful cybersecurity. It covers the standards and best practices mandated in cybersecurity implementation as well as in-depth topics on implementation and integration of cybersecurity in a unified enterprise framework including application, system and network management, governance, threat and incident management, and business continuity.

4.0 COURSE OBJECTIVES AND LEARNING OUTCOMES

Learning outcomes describe what students are expected to have learned or achieved; as a result, they usually describe what students will be capable of doing, or what evidence will be provided to substantiate learning.

- Explain the enterprise information security framework, asset security and protection, governance and oversight.
- Demonstrate knowledge of Information Security Governance.
- Describe the principles of Information Security Risk Assessment.
- Demonstrate knowledge of Cybersecurity Function, including people, system and asset management.
- Demonstrate knowledge of Technical Security Management.
- Demonstrate knowledge of Information Security Operations Centre.
- Describe the impact of emerging technologies, such as Quantum Information Technologies and Artificial Intelligence, on Information Security.

5.0 TEXTS & OTHER READING MATERIALS

Main Textbook:

Title: Effective Cybersecurity: A Guide to Using Best Practices and Standards (2019)

Author: William Stallings

Publisher: Pearson

Additional Reading:

CISSP (ISC)2 Certified Information Systems Security Professional Official Study Guide

Rob Arnold;

Cybersecurity: A Business Solution: An executive perspective on managing cyber risk;

Threat Sketch, LLC; Winston-Salem, NC; 2017; ISBN-10:

069294415X; ISBN-13: 978-0692944158

Scott E. Donaldson, Stanley G. Seigel, Chris K. Williams, Abdul Aslam;

Enterprise Cybersecurity Study Guide: How to Build a Successful Cyberdefense Program Against Advanced Threats;

A press; New York,
NY 2018; ISBN-10: 1484232577; ISBN-13: 978-
1484232576

6.0 TEACHING METHODS

In Fall 2020 this course will be taught remotely in virtual classrooms. Instruction will take place at scheduled hours, following the approach outlined in D2L Brightspace. You will not be required to attend the Ryerson University campus to complete this course.

This course will incorporate the following teaching and learning methods:

- Regular lectures, prescribed weekly readings, problem-based assignments, group project work, and case study discussions are the main teaching activities that occur in this course.
- Since a major component of this course is problem based learning the four individual assignments provide the students practice and progressive skill building that they can apply in the group based project.
- The group project work allows the students to apply the analytical techniques that were introduced in class and practiced in the problem sets. In addition, by working in small teams the students develop group interaction and individual and group presentation skills.
- The instructor will establish an active learning environment by engaging the students in a Socratic exchange of relevant questions and ideas. Students should expect a frequent and substantive interaction between the instructor and students and among students in every class.

7.0 EVALUATION, ASSESSMENT AND FEEDBACK

The grade for this course is composed of the mark received for each of the following components:

Evaluation Component	Percentage of the Final Grade
Weekly Online Quiz	40%
Project	20%
Midterm Examination	20%
Final Examination	20%
Total	100%

NOTE: Students must achieve a course grade of at least 50% to pass this course.

At least **20%** of student's grade based on individual work will be returned to students prior to the last date to drop a course in [good academic standing](#).

Citation Format for Essays and Term Papers

All essay assignments, term paper and other written works must adhere with APA citation format. Technical errors (spelling, punctuation, proofing, grammar, format, and citations) and/or inappropriate levels of language or composition will result in marks being deducted. You are encouraged to obtain assistance from the Writing Centre (www.ryerson.ca/writingcentre) for help with your written communications as needed.

You can find APA guidelines and academic referencing from the following online resources:

[Student Learning Support > Online Resources > Writing Support Resources](#)

- [APA Basic Style Guide](#)

[Ryerson Library Citations and Style Guides](#)

- [APA Style](#)

8.0 PLAGIARISM DETECTION

Turnitin (if used in this course)

Turnitin.com is a plagiarism prevention and detection service to which Ryerson subscribes. It is a tool to assist instructors in determining the similarity between students' work and the work of other students who have submitted papers to the site (at any university), internet sources, and a wide range of books, journals and other publications. While it does not contain all possible sources, it gives instructors some assurance that students' work is their own. No decisions are made by the service; it generates an "originality report," which instructors must evaluate to judge if something is plagiarized.

Students agree by taking this course that their written work will be subject to submission for textual similarity review to Turnitin.com. Instructors can opt to have student's papers included in the Turnitin.com database or not. Use of the Turnitin.com service is subject to the terms-of-use agreement posted on the Turnitin.com website. Students who do not want their work submitted to this plagiarism detection service must, by the end of the second week of class, consult with their instructor to make alternate arrangements.

Even when an instructor has not indicated that a plagiarism detection service will be used, or when a student has opted out of the plagiarism detection service, if the instructor has reason to suspect that an individual piece of work has been plagiarized, the instructor is permitted to submit that work in a non-identifying way to any plagiarism detection service.

9.0 TOPICS – SEQUENCE & SCHEDULE

Session	Topic	Learning Outcomes	Readings	Activities & Due Dates
1	Enterprise Information Security Best Practices	Explain the foundations of Information security CIA Triad and tools providing confidentiality, authenticity, and integrity. Understanding the Standard of Good Practice for Information Security. Explaining NIST Cybersecurity Framework and Security, COBIT 5 for	Chapter 1 Lecture Notes	Sep. xx, 2020 Intro to Project. Online Quiz prep

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		Information Security, and Payment Card Industry Data Security Standards.		
2	Security Governance Information Risk Assessment	Describing security Governance and Security Management. Explaining Security Governance Principles and Desired Outcomes and Security Governance Components. Explaining System Assessment Approaches. Describing Asset, Threat, Control, Vulnerability and Consequences Identifications. Explaining Risk Analysis, Evaluation, Treatment and Risk Assessment Best Practices.	Chapter 2 Chapter 3 Lecture Notes	Sep. xx, 2020 Quiz 1
3	Security Management People Management	Describing the Security Management Function, Security Policy, and Acceptable Use Policy. Explaining Security Management Best Practices. Understanding Human Resource Security and Security Awareness and Education.	Chapter 4 Chapter 5 Lecture Notes	Sep. xx, 2020 Quiz 2
4	Information Management Physical Asset Management	Describing information Management and Information Classification and Handling. Understanding Document and Records Management and Sensitive Physical Information handling. Explaining Hardware Life Cycle Management. Describing Industrial Control Systems and Mobile Device Security.	Chapter 6 Chapter 7 Lecture Notes	Sep. xx, 2020 Quiz 3 Group Formation for the Project is due. Groups of size 5.
5	System Development Business Application Management	Describing System Development Life Cycle. Understanding System Development Management. Explaining System Development Best Practices. Describing Application Management Concepts and Corporate Business Application Security. Explaining End User Developed Application Security	Chapter 8 Chapter 9 Lecture Notes	Oct. xx, 2020 Quiz 4

		and Business Application Management Best Practices.		
6	Midterm Examination			.Oct. xx, 2020
7	System Access System Management	Explaining System Access Concepts, such as User Authentication, Risk Assessment for User Authentication, Access Control, Customer Access. Describing Server Configuration, Virtual Servers, Network Storage Systems, Service Level Agreements. Understanding Performance and Capacity Management, Backup and Change Management.	Chapter 10 Chapter 11 Lecture Notes	Oct. xx, 2020 Quiz 5
8	Network and Communications Supply Chain Management	Explaining Network Management Concepts, Firewalls, Virtual Private Networks and IP Security. Understanding Security Considerations for Network Management and Electronic Communications. Explaining Supply Chain Management Concepts. Understanding Supply Chain Risk Management, Cloud Computing and Cloud Security.	Chapter 12 Chapter 13 Lecture Notes	Nov. xx, 2020 Quiz 6
9	Technical Security Management	Understanding Security Architecture principles. Understanding different security protections and their roles such as malware protection, Identity and Access Management, Intrusion Detection, Information Leakage Protection, Digital Rights Management, Cryptographic Solutions and Cryptographic Key Management.	Chapter 14 Lecture Notes	Nov. xx, 2020 Quiz 7
10	Threat and Incident Management	Understanding Technical Vulnerability Management, Security Event Logging, and Security Event	Chapter 15 Chapter 16	Nov. xx, 2020 Quiz 8

	Local Environment Management	Management. Describing how Threat Intelligence works. Understanding the Security Incident Management Framework and the Security Incident Management Process. Describing the Emergency Fixes, Forensic Investigations, and Physical Security.	Lecture Notes	
11	Business Continuity Security Security Monitoring and Improvement	Understanding the Business Continuity Concepts, elaborate on Business Continuity Program, Business Continuity Readiness, and Business Continuity Operations. Describe Business Continuity Best Practices. Describing of Security Audit. Understanding Security Performance and describing Security Monitoring and Improvement Best Practices	Chapter 17 Chapter 18 Lecture Notes	Nov. xx, 2020 Quiz 9.
12	Project presentations	Project Deliverables, risk assessment of a case from NIST handbook	TBA	Dec. xx, 2020

10.0 VARIATIONS WITHIN A COURSE

All sections of a course (Day and CE sections) will follow the same course outline and will use the same course delivery methods, methods of evaluation, and grading schemes. Any deviations will be posted on D2L Brightspace once approved by the course coordinator.

11.0 OTHER COURSE, DEPARTMENTAL, AND UNIVERSITY POLICIES

For more information regarding course management and departmental policies, please consult the [Course Outline Appendix](#) which is posted on the [Ted Rogers School of Information Technology Management website](#).

NOTE: Students must adhere to all relevant university policies found in their online course shell in D2L and /or on the following URL: [senate-course-outline-policies](#).

The appendix covers the following topics:

- Attendance & Class Participation
- Email Account
- Request for Academic Consideration

Examinations & Tests
Late Assignments
Standard of Written Work
Academic Grading Policy
Academic Integrity
Student Rights

Important Resources Available at Ryerson

- [Academic Accommodation Support](#): Ryerson University acknowledges that students have diverse learning styles and a variety of academic needs. If you have a diagnosed disability that impacts your academic experience, connect with Academic Accommodation Support (AAS). Visit the [AAS website](#) or contact aasadmin@ryerson.ca for more information. Note: All communication with AAS is voluntary and confidential, and will not appear on your transcript.
- [The Library](#) provides research workshops and individual assistance. If the University is open, there is a Research Help desk on the second floor of the library, or go to [Workshops](#).
- [Student Learning Support](#) offers group-based and individual help with writing, math, study skills, and transition support, as well as [resources and checklists to support students as online learners](#).
- You can submit an [Academic Consideration Request](#) when an extenuating circumstance has occurred that has significantly impacted your ability to fulfill an academic requirement.
- [Ryerson COVID-19 Information and Updates for Students](#) summarizes the variety of resources available to students during the pandemic.
- Familiarize yourself with the tools you will need to use for remote learning. The [Continuity of Learning Guide](#) for students includes guides to completing quizzes or exams in D2L or Respondus, using D2L Brightspace, joining online meetings or lectures, and collaborating with the Google Suite.