RYERSON UNIVERSITY

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

(C)ITM 595 – Auditing of Information Systems

COURSE OUTLINE FOR 2020-2021

1.0 PREREQUISITE(S)

The prerequisite for this course is (ACC 521 or AFA 518) and (ITM 696). Students who do not have the prerequisite will be dropped from the course.

2.0 INSTRUCTOR INFORMATION

- Name:

- Office Phone Number:

- E-mail address:

- Faculty/course web site(s): https://my.ryerson.ca

- Office Location & Consultation hours:

  ➢ 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.

3.0 CALENDAR COURSE DESCRIPTION

This course is designed to enhance the student's understanding of audit risks and control risks relevant to audits in computerized environments. The course addresses the implementation and evaluation of security and controls in these environments; the techniques necessary to perform external EDP audits; auditing using CAATs; basic considerations in auditing EDI systems; and, audit and control issues associated with eCommerce, networks, VPNs and continuous auditing. The course will focus on auditing of Information Systems, which produce internal and external reports. Students

will be introduced to audit approaches, computer risks, concerns related to internal controls and techniques for evaluating systems and business processes. Students will also be able to assess the integrity of data used in various management reports.

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.

Recent developments in Information Systems and Technology have had a tremendous impact on the field of Auditing. In order to increase the efficiency of operations and effectiveness of communication with customers and suppliers several traditional business processes have been reengineered, which in turn introduced new risks. Set of unique internal controls and consequently new techniques for evaluation them and assuring the security and accuracy of corporate data is required.

This course will focus on auditing of Information Systems, which produce internal and external reports. Students will be introduced to audit approaches, computer risks, concerns related to internal controls and techniques for evaluating systems and business processes.

The combination of theory and applied learning through intensive use of cases helps students understand both basic concepts of the general auditing conducted in the computer-based environment and relationship between external auditing and Information Technology audits. Students will also be able to assess the integrity of data used in various management reports.

The main objective of the course is to provide students with the understanding of auditor's computer auditing and assurance responsibilities. Upon completion of the course, students will be able to:

1. Determine risks and exposures introduced by computer-based information systems
2. List types of controls that may be used to reduce such risks to an acceptable level and design controls for a particular business situation
3. Evaluate different controls (preventive, detective and corrective) in a computerized environment
4. Make Audit decisions in a computer-based information system
5. Assess the impact of risks and controls on audit strategy
6. Learn to us e and apply on a n audit project using Computer Assisted Auditing Tool (CAAT)
7. Develop IT Audit plans
8. Investigate the company and determine audit risks; evaluate controls and determine impact of IT related exposures on the integrity of financial and managerial data.
9. Depict the similarities/differences of manual, various batch processing and real time data processing environments in a computerized information system.
10. Prepare written reports that summarize all findings, conclusions, recommendations and present the key suggestions to the class.

There is heavy emphasis in the course on class participation and team work.

5.0 TEXTS & OTHER READING MATERIALS

Title: Information Technology Auditing (with ACL CD-ROM), 4th Edition
Author: James A. Hall
Publisher: South-Western College
ISBN: 978-1133949886

Additional course reading materials or instructions or for obtaining this material will be posted on the course website.

6.0 TEACHING METHODS
In Fall 2020 this course will be taught 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.

Lectures, readings, case study analysis and discussions are the primary teaching methods in this course. You are expected to have studies the assigned readings and completed pre-class case study analysis prior to attending the lectures. Lectures will review and expand the textual material and provide students with the professor's commentary, examples and illustrations. Case studies will be used to illustrate how concepts and tools introduced in class can be applied in real organizations. Each student is expected to contribute to the active learning of the class through in-class discussions and will be graded accordingly.

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
Midterm Exam	30%
Group Project 1 - Audit plan	10%
Group project 2 - ACL	15%
Final Exam	45%
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.

Virtual Proctoring (if used in this course)
Online exam(s) within this course use a virtual proctoring system. Please note that your completion of the exam will be recorded via the virtual platform and subsequently reviewed by your instructor. The virtual proctoring system provides the instructor with a recording that only includes video where possible indications of suspicious behaviour are identified. Recordings will be held for a limited period of time in order to ensure academic integrity is maintained.

Access to a computer that can support remote recording is your responsibility as a student. The computer should have the latest operating system, at a minimum Windows (10, 8, 7) or Mac (OS X 10.10 or higher) and web browser Google Chrome or Mozilla Firefox. You will need to ensure that you can complete the exam using a reliable computer with a webcam and microphone available, as well as a high-speed internet connection. Please note that you will be required to show your Ryerson OneCard prior to beginning to write the exam. In cases where you do not have a Ryerson OneCard, government issued ID is permitted.

Information will be provided prior to the exam date by your instructor who may provide an opportunity to test your set-up or provide additional information about online proctoring. Since videos of you and your environment will be recorded while writing the exam, please consider preparing the background (room / walls) so that personal details are not visible, or move to a room that you are comfortable showing on camera.

9.0 TOPICS – SEQUENCE & SCHEDULE

Session	Topic	Readings	Activities & Due Dates
1	Course Introduction - Course of Study - ISACA Standards, Guidelines, and Procedures - Overview of IT Audit and Conducting an IT Audit - Internal Control Objectives, Principles and Models	Chapter 1 ISACA Guidelines pages 4-14 (posted to BB)	**Create teams**
2	Auditing IT Governance Controls - IT Governance - IT Function and Structure - The Computer Center - Disaster Recovery Planning - Outsourcing **Overview of Project 1**	Chapter 2	**Create Teams Finalize team selection**
3	Security Part 1: Auditing Operating Systems and Networks - Auditing Operating Systems - Auditing Networks - Auditing EDI - Auditing PC-based - Accounting Systems	Chapter 3	
4	Security Part 2: Auditing Data Base Systems - Data Management Approaches - Key Elements of the Database Environment - Databases in a Distributed Environment - Controlling and Auditing Data Management Systems	Chapter 4	

5	Systems Development and Program Change Activities • Participants in Systems Development • Information Systems Acquisition • The Systems Development Life Cycle • Controlling and Auditing the SDLC	Chapter 5	**Project 1 Due**
6	Overview of ACL Software – needed for Project 2 (after midterm exam is concluded) Computer-Assisted Audit Tools and Techniques • Applications Controls • Testing Computer Application Controls Computer-Aided Audit Tools and Techniques for Testing Controls	Chapter 7	**Mid Term Examination**
7	**Overview of Project 2** Data Structures and CAATTs for Data Extraction • Data Structures • Designing Relational Databases • Embedded Audit Module • Generalized Audit Software • ACL Software (2)	Chapter8 Additional information may be posted to course website	
8	Transaction Processing and Financial Reporting Systems Overview • Overview of Transaction Processing • Documentation Techniques • Computer-based Accounting Systems • Data Coding Schemes • The General Ledger System • The Financial Reporting System • XBRL • Controlling the FRS	Chapter 8 Additional information may be posted to course website	
9	Auditing the Revenue Cycle and the Expenditure Cycle (emphasizing the technologies and risks) • Revenue Cycle Activities and Technologies • Revenue Cycle Audit Objectives, Controls, and Tests of Controls • Substantive Tests of Revenue Cycle Accounts • Expenditure Cycle Activities and Technologies • Expenditure Cycle Audit Objectives, Controls, and Tests of Controls • Substantive Tests of Expenditure Cycle Accounts	Chapter 9; Chapter 10 Additional information may be posted to course website	

10	Enterprise Resource Planning Systems • ERP configurations • Data Warehousing • Associated Risks • Implications for Internal Control and Auditing • Cloud Computing	Chapter 11 Additional information may be posted to course website	**Project 2 due**
11	Business Ethics, Fraud and Fraud Detection • ISACA Code of Ethics • Ethical Issues • Sarbanes-Oxley • EU Directive/ Safe Harbor • PIPEDA • PHIPPA • Fraud and Accountants • Auditor's Responsibility for Detecting Fraud • Fraud Detection Techniques	Chapter 12 Additional information may be posted to course website	
12	**Course Review**		

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.