

RYERSON UNIVERSITY

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

(C)ITM 706 – Enterprise Architecture

COURSE OUTLINE FOR 2020-2021

1.0 PREREQUISITE(S)

The prerequisite for this course is ITM 410. 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 focuses on business analysis, organizational processes, enterprise architecture, and security/risk management. This course explores the design, selection, implementation and management of enterprise business processes from the perspectives of IT capabilities. These capabilities are typically organized and presented as enterprise architecture, consisting of high-level internally compatible representations of organizational business models, data, applications, and information technology infrastructure. Students will learn frameworks and strategies for

infrastructure management. They will hone their ability to communicate technology architecture strategies concisely to a general business audience.

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.

This course explains what Enterprise Architecture (EA) is and how to create and maintain effective business models that enhance business strategic goals and decision-making processes from the perspectives of ICT enabled business processes. The course explains how to integrate the Service Oriented architecture (SOA) with business process logics. It introduces some of the well-known EA frameworks and the ties between enterprise architecture and ICT infrastructure through some practical case studies that explain how to build and maintain business architecture within an organization.

COURSE OBJECTIVES

This course has 8 learning objectives in developing the student's ITM knowledge and skills at the university level. These objectives are aligned with AACSB standards and the IS 2010 model curriculum published by Association for Information Systems (AIS) and the Association for Computing Machinery (ACM).

1. Explain the principles underlying an enterprise architecture system.
2. Learn how to link the organization logic business logic processes with ICT infrastructure reflecting the integration and standardization requirements of the company's strategic goals.
3. Explain how digitized business processes, IT infrastructure, shared data and customer interfaces are identified and linked in the enterprise architectures.
4. Explain the ICT engagement model as a system of governance mechanism to ensure business and IT projects achieve both local and companywide objectives.
5. Explain the integration of Service Oriented architecture (SOA) with business process logics.
6. Understand the importance of integrating people, ICT and business processes with business strategic goals.
7. Learn about some of the existing EA frameworks and tools and how they are applied in business today

Understand the principles underlying Enterprise Security, Privacy, Trust and Accessibility for Enterprise Architecture

5.0 TEXTS & OTHER READING MATERIALS

Title: Enterprise Architecture at Work: Modelling, Communication and Analysis (4rd Edition)

Author: Marc Lankhorst

Publisher: Springer

ISBN: 978-3662539323

TOGAF online resources:

The Open Group Documentation:

Available from: <http://pubs.opengroup.org/architecture/togaf9-doc/arch/>

Suggested/Recommended Textbook

Title: Modeling Enterprise Architecture with TOGAF: A Practical Guide Using UML and BPMN

Authors: Philippe Desfray and Gilbert Raymond

Publisher: Morgan Kaufmann

ISBN: 978 – 012-4199842

Title: Enterprise Architecture as Strategy: Creating a Foundation for Business Execution

Authors: Jeanne W. Ross, Peter Weill, David C. Robertson

Publisher: Harvard Business Press Books

ISBN: 978-1591398394

Title: Modeling Service-Oriented Architectures: An Illustrated Example using Sparx Systems Enterprise Architect

Author: Doug Rosenberg

Publisher: Sparx Systems Pty Ltd and ICONIX

Available for Download:

<http://www.sparxsystems.com.au/downloads/ebooks/Modeling%20Service-Oriented%20Architectures.pdf>

IBM Redbooks: Combining Business Process Management and Enterprise Architecture for Better Business Outcomes

Authors: Claus T. Jensen, Owen Cline, and Martin Owen

Publisher: IBM

Available for Download: <http://www.redbooks.ibm.com/redbooks/pdfs/sg247947.pdf>

IBM Redbooks: Patterns: Service-Oriented Architecture and Web Services

Authors: Mark Endrei, Jenny Ang, Ali Arsanjani, Sook Chua, Philippe Comte, Pål Kroghdahl, Min Luo, and Tony Newling

Available for Download: <http://www.redbooks.ibm.com/redbooks/pdfs/sg246303.pdf>

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 three 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.
- Those students that actively participate in the learning process will gradually assume ownership of the knowledge contained in the course materials. In addition to ownership of the course content, the students will

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
Labs	5%
3Assignments (5% each)	15%
Midterm Exam	25%
Group Project	10%
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	Learning Outcomes	Reading(s)	Activities & Due Dates
1	<p>Application of Business Process Modeling (BPM) & Legacy ERP systems</p> <p>Learning Outcomes</p> <ul style="list-style-type: none"> ● Describe business process management ● Describe legacy systems and their limitations in today's business environment 	<p>Review Lecture Notes</p>		
2	<p>Introduction to Enterprise Architecture</p> <p>Learning Outcomes</p> <ul style="list-style-type: none"> ● Describe the architecture process ● Explain business architecture modeling and its drivers ● Explore the foundations of Sparx System 	<p>Chapter 1 Lecture Notes</p>	<p>Introduction to Sparx</p>	
3	<p>Enterprise Architecture frameworks & methods</p> <p>Learning Outcomes</p> <ul style="list-style-type: none"> ● Describe Enterprise Architectures ● Explain TOGAF & Zackman frameworks ● Explain MOG's Model driven Architecture ● Discuss principles of BPMN 	<p>Chapters 2 & 3 Lecture Notes</p>	<p>Assignment 1 due</p>	

4	<p>Enterprise Architecture Modeling</p> <p>Learning Outcomes</p> <ul style="list-style-type: none"> ● Explain EA Goals, Requirements, Constraints and Principle ● Explain EA Stakeholders, Drivers and Assessment ● Explain EA Business Layer ● Explain EA Technology Layer 	Chapters 4 & 5 Lecture Notes		
5	<p>Enterprise Architecture Tools, view and viewpoints</p> <p>Learning Outcomes</p> <ul style="list-style-type: none"> ● Explain ArchiMate tools ● Explain BPMN with TOGAF ● Explain the modeling processes 	Chapters 6 & 7, Lecture Notes	Assignment 2 due	
6	<p>Enterprise Architecture Development</p> <p>Learning Outcomes</p> <ul style="list-style-type: none"> ● Explain Viewpoints & Visualization ● Explain functional analysis of EA 	Chapters 8 & 9 Lecture Notes	Group Project Case	
7	<p>Group Project case</p> <p>Midterm Examination</p>			
8	<p>Governance Models for Enterprise Architecture</p> <p>Learning Outcomes</p> <ul style="list-style-type: none"> ● Explain the role of IT Governance in EA ● Describe Infrastructure Architecture ● Explain Business System Architecture 	Chapter 10 Lecture Notes	Assignment 3 due	
9	<p>Business Process Modeling with BPMN2.0</p>	Sparx Lecture Notes		

	<p>Learning Outcomes</p> <ul style="list-style-type: none"> ● Explain BPMN in Sparx System ● Describe BPMN vs. ArchiMate 2.0 			
10	<p>Enterprise Architecture Assessment & Analysis</p> <p>Learning Outcomes</p> <ul style="list-style-type: none"> ● Describe EA analysis techniques ● Explain functional analysis of an EA 	Chapter 9 Lecture Notes	EA Analysis	
11	<p>Service Oriented Architecture (SOA), Modeling and Architecture with BPMN</p> <p>Learning Outcomes</p> <ul style="list-style-type: none"> ● Explain the conceptual model of a SOA architectural ● Explain SOA and Universal Description • Discovery and Integration (UDDI) ● Explain Business Process Execution Language (BPEL) 	Lecture Notes	Group Project Due SOA Modeling	
12	<p>Enterprise Security and Risk assessment, Privacy, Trust and Accessibility</p> <p>Learning Outcomes</p> <ul style="list-style-type: none"> ● Explain Risk Analysis ● Explain security principles of information security integrated with EA ● Explain Privacy-by-Design (PbD) principles associated with EA 	Chapter 9 Lecture Notes	Enterprise Security Guidelines Privacy by Design	

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.