

RYERSON UNIVERSITY

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

(C)ITM 305 – Systems Analysis and Design

COURSE OUTLINE FOR 2019-2020

1.0 PREREQUISITE(S)

The prerequisite for this course is (ITM 100 or ITM 102) or in the two-year Business Technology Management Ontario College Diploma Graduate Program.

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 personal consultation during scheduled consultation hours which are posted on their office door or on the course shell in D2L Brightspace. However, you are advised to make an appointment by e-mail or by telephone before coming to ensure that the professor is not unavoidably absent.
- E-mail Usage & Limits:

Students are expected to monitor and retrieve messages and information issued to them by the University via Ryerson online systems on a frequent and consistent basis. ***Ryerson requires that any official or formal electronic communications from students be sent from their official Ryerson E-mail account.*** As such emails from other addresses may not be responded to.

3.0 CALENDAR COURSE DESCRIPTION

The course covers the key concepts, techniques, and methodologies relevant to the process of developing information systems (IS). The course focuses on the development of requirements, analysis, and design models of the system to be. The specifications of these models are done using the Unified Modeling Language (UML). In addition, the course provides a contextual coverage of the system development life cycle and select concepts of IS construction, deployment and project management respectively.

4.0 COURSE OBJECTIVES AND LEARNING OUTCOMES

To acquire knowledge of and competency in the major techniques used in the analysis and design of the business information systems. Specifically, to acquire a competency in developing UML diagrams to facilitate the documentation of the analysis and design requirements to meet development requirements.

Upon completion of the course, the student is expected to be able to:

1. Explain the fundamentals of IS development life cycle and methodologies.
2. Explain the key elements of requirements' elicitation, gathering and specification.
3. Create models of system functional behavior.
4. Create structural analysis models of information systems.
5. Create behavioral analysis models of information systems.
6. Explain the fundamentals of system design
7. Explain the Object Oriented Design concepts
8. Create Use Case Realization diagrams

5.0 TEXTS & OTHER READING MATERIALS

Title: Systems Analysis and Design in a Changing World (7th Edition)

Author: John W. Satzinger, Robert B. Jackson, Stephen D. Burd

Publisher: Cengage Learning

ISBN: 978-1305117204

6.0 TEACHING METHODS

The course will incorporate lecture and laboratory/tutorial sessions designated at the instructor's discretion. The laboratory/tutorial sessions will be dedicated to practice and problem solving exercises designed to reinforce the learning of the concepts being taught and develop the associated analysis and design skills.

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	Week Due	Week Evaluation Returned
Lab/Homework	10%	1-10	2-11

Midterm Exam	20%	6	7
Project Phase I	10%	7	9
Project Phase II	10%	11	Exam Week
Final Exam	50%		
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 TOPICS – SEQUENCE & SCHEDULE

Session	Weekly Topic with Learning Objectives	Readings
1	Fundamentals of Information Systems Development Life Cycle and Development Approaches and Methodologies <ul style="list-style-type: none"> • Describe the purpose of Systems Analysis and Design • Explain the Systems Development Life Cycle • Explain the Methodologies for the six core processes 	Chapter 1/10
2	Requirement Gathering & Specification <ul style="list-style-type: none"> • Describe the activities of Systems Analysis • Explain the difference between function and nonfunctional requirements • Identify and understand different kinds of stakeholders • Describe and understand information gathering techniques • Describe the role of models and UML in Systems Analysis 	Chapter 2
3	Use Case Modeling with Use Case Diagrams <ul style="list-style-type: none"> • Describe role of Use Stories and Use Case • Apply Event Decomposition to identify Use Cases 	Chapter 3

	<ul style="list-style-type: none"> • Understand Use Case Notation • Implement Use Case Diagrams by actor and subsystem 	
4	<p>Use Case Specification & Documentation</p> <ul style="list-style-type: none"> • Implement fully developed Use Case descriptions • Explain how use case descriptions and UML diagrams work together to define functional requirements <p>Activity Diagrams</p> <ul style="list-style-type: none"> • Describe the role of Activity Diagrams • Understand Activity Diagram Notation <p>Implement Activity Diagrams</p>	Chapter 5
5	<p>Domain Class Diagrams</p> <ul style="list-style-type: none"> • Explain the concept of “things” in the problem domain • Identify and analyze domain classes • Create a Domain Model Class Diagram 	Chapter 4
6	<p>Midterm Exam (hour 1)</p> <p>Foundations of System Design (hour 2)</p> <ul style="list-style-type: none"> • Describe the activities of Systems Design • Identify the documents and models used in Systems Design • Explain each major design activity 	Chapter 6
7	<p>System Sequence Diagrams</p> <ul style="list-style-type: none"> • Describe the role of System Sequence Diagrams • Understand System Sequence Notation • Implement System Sequence Diagrams 	Chapter 5
8	<p>Object Oriented Design Fundamentals</p> <ul style="list-style-type: none"> • Explain the purpose and objectives of object-oriented design • Develop Design Class Diagrams • Explain the important fundamentals of object-oriented design 	Chapter 12
9	<p>Overview of Use Case Realizations – Single Layer</p> <ul style="list-style-type: none"> • Develop Sequence Diagrams for Use Case Realization • Understand Relationship to SSD and Class Diagrams 	Chapter 13
10	<p>Overview of Use Case Realizations – Multi Layer</p> <ul style="list-style-type: none"> • Explain the different types of objects and layers in a design • Understand the User Interface layer • Understand the Data Access Layer • Understand Packaging Diagrams 	Chapter 13 (Cont’d)
11	<p>Defining the System Architecture</p> <ul style="list-style-type: none"> • Explain architectural concepts that influence System Design • Describe a systems environment 	Chapter 7
12	Agile Approaches and Course Review	Handouts

	<ul style="list-style-type: none">• Explain the concepts behind Agile• Review the different Agile techniques employed in industry• Course Review	
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9.0 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.

10.0 OTHER COURSE, DEPARTMENTAL, AND UNIVERSITY POLICIES

For more information regarding course management and departmental policies, please consult the [‘Appendix of the Course Outline’](#) 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:

1. Attendance & Class Participation
2. Email Account
3. Request for Academic Consideration
4. Examinations & Tests
5. Late Assignments
6. Standard of Written Work
7. Academic Grading Policy
8. Academic Integrity
9. Student Rights