

RYERSON UNIVERSITY

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

COURSE OF STUDY 2017-2018

(C)ITM 305 – Systems Analysis and Design

1.0 PREREQUISITE

The prerequisite for this course is [(ITM 100 and ITM 207) or ITM 102] or in the two-year Business Technology Management Ontario College Diploma Graduate Program. Students who do not have the prerequisites 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 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 OVERVIEW

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.

5.0 COURSE OBJECTIVES

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

6.0 EVALUATION

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

Evaluation Component	Percentage of the Final Grade
Lab/Homework	10%
Midterm Exam	20%
Project (submitted in 2 phases)	20%
Final Exam	50%
Total	100%

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

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:

a) Ryerson Writing Support Web site:

<http://www.ryerson.ca/content/dam/studentlearningsupport/resources/citation-conventions/APA%20Basic%20Style%20Guide.pdf>

b) Ryerson Library for APA style guide: <https://library.ryerson.ca/guides/style/>

7.0 POSTING OF GRADES

- ❖ All grades, on assignments or tests must be posted or made available to students through the return of their work. Grades on final exams must be posted. However, as there may be other consideration in the determination of final grades, students will receive their official final grade in the course only from the Registrar. Final official course grades may not be posted or disclosed anywhere by an instructor.
- ❖ Posting of grades on the Course Management System (D2L Brightspace) is preferred. If grades are posted in hard copy they must be posted numerically sorted by student identification number after at least the **first four digits** have been removed. Instructors must inform students in all course management documentation of the method to be used in the posting of grades. Students who wish not to have their grades posted must inform the instructor in writing.
- ❖ Some graded work will be returned to students prior to the last date to drop a course without academic penalty.

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 • Understand Use Case Notation • Implement Use Case Diagrams by actor and subsystem 	Chapter 3
4	Use Case Specification & Documentation <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 	Chapter 5
5	Domain Class Diagrams <ul style="list-style-type: none"> • Explain the concept of “things” in the problem domain • Identify and analyze domain classes 	Chapter 4

	<ul style="list-style-type: none"> • Create a Domain Model Class Diagram 	
6	Midterm Exam	
7	Activity Diagrams and System Sequence Diagrams <ul style="list-style-type: none"> • Describe the role of Activity Diagrams • Understand Activity Diagram Notation • Implement Activity Diagrams • Describe the role of System Sequence Diagrams • Understand System Sequence Notation • Implement System Sequence Diagrams 	Chapter 5
8	Foundations of System Design <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
9	Object Oriented Design Fundamentals <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
10	Overview of Use Case Realizations <ul style="list-style-type: none"> • Explain the different types of objects and layers in a design • Develop Sequence Diagrams for Use Case Realization 	Chapter 13
11	Defining the System Architecture <ul style="list-style-type: none"> • Explain architectural concepts that influence System Design • Describe a systems environment 	Chapter 7
12	User Interfaces <ul style="list-style-type: none"> • Explain the concept of user experience, interface and usability • Describe the important characteristics of human interface that impact usability • Describe the important guidelines for desktop applications and mobile devices. 	Chapter 8

9.0 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.

10.0 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

11.0 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.

12.0 OTHER COURSE, DEPARTMENTAL, AND UNIVERSITY POLICIES

- For more information regarding course management and departmental policies, please consult the ‘**Appendix of the Course of Study**’ which is posted on the Ted Rogers School of Information Technology Management website, <http://www.ryerson.ca/content/dam/itm/documents/cos/Appendix.pdf>. This appendix covers the following topics:

- 12..1** Attendance & Class Participation
- 12..2** Email Usage
- 12..3** Request for Academic Consideration
 - 12..3.1** Ryerson Health Certificate
 - 12..3.2** Academic Accommodation for Students with Disabilities
 - 12..3.3** Religious, Aboriginal or Spiritual Observance
 - 12..3.4** Re-grading and Recalculation
- 12..4** Examinations & Tests
 - 12..4.1** Period of Prohibition from Testing
 - 12..4.2** Make-Up of Mid-Term Tests, Assignments and Other Assessments
 - During the Semester
 - 12..4.3** Make –Up of Final Exams
 - 12..4.4** Missing a Make-Up
- 12..5** Late Assignments
- 12..6** Standard of Written Work
- 12..7** Academic Grading Policy
- 12..8** Academic Integrity
 - 12..8.1** Turnitin.com
- 12..9** Student Rights