

# ISOM3210: Information Systems Analysis and Design Spring 2020

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**Class Schedule:** Mon. 16:30 ~ 17:50

Fri. 12:00 ~ 13:20

**Lab Schedule:** Thu. 13:30 ~ 14:20

**Course Website:** <https://canvas.ust.hk>

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## Introduction

Nowadays, many firms attempt to develop information systems (IS) to gain competitive advantages and deal with various challenges in an increasingly competitive business world. The primary objective of IS development is not to create a wonderful system. Instead, it is to facilitate and improve the work processes for a firm to achieve better performance.

However, it is not uncommon that firms experience time and cost overruns in their system development projects because IS managers (or analysts) try to build a system without a clear understanding of how a new system will fit with the firm's strategic goals, current business processes, and other existing systems. As firms continue to implement different systems that are not integrated with each other, their overall business efficiency may decline. Therefore, it is critical to identify the core issues, analyze the business processes, and formulate integrated solutions.

This course will provide an overview of fundamental principles of IS development methodologies. The primary objective of this course is to help business students understand business-IS alignment and to provide them with the key skills related to IS development:

- Understand the IS development process;
- Capture and analyze business requirements; and
- Document those requirements using proper methodologies and modeling tools, and be ready to move into the design and implementation phase of the systems development cycle.

## Key Components of the Course

The course includes the following three key components:

- **Lectures:** explain and discuss the key topics on system analysis and design and provide students with in-class exercises relevant to the topics
- **Labs:** strengthen the knowledge acquired in lectures by working on more advanced exercises
- **Team project:** provide students with hands-on experience in applying knowledge and skills learned in class to real-life applications

## Learning Outcomes (Adapted from Outcome Based Education: PILOs-BBA-IS)

Course student learning outcomes:

- Analyze the core issues and identify critical factors for IS development-related decision-making
- Solve business problems using analytical IS development methodologies
- Understand how IS interact with other business areas
- Demonstrate substantial knowledge and understanding of system analysis and modeling paradigms
- Apply IS development frameworks and tools to resolve business problems in the IS sector of an organization and other business sectors relying on IS
- Understand key IS development management issues and make sound IS development decisions as business managers

In addition, throughout the semester, students will have opportunities to develop ability to:

- Produce professional quality business documents in English
- Deliver a professional quality presentation in English
- Communicate ideas persuasively to inform and convince others
- Demonstrate an understanding of team dynamics and the various roles played within the team
- Contribute to the successful and timely completion of a group project in line with their roles in teams
- Collaborate positively by actively seeking and engaging in discussion of the views of others while showing sensitivity to opposing views
- Demonstrate the ability to lead a team to success

## Grading

- Lab participation (5%)
- Individual assignments (30%)
- Team project (35%)
  - Proposal (5%)
  - Report (15%)
  - Presentation (15%)
- Final exam (30%)

## Textbooks

1. “System Analysis and Design with UML: An Object-Oriented Approach”, by Alan Dennis, Barbara Haley Wixom and sDavid Tegarden; 5th ed., 2015; John Wiley & Sons; ISBN 9-781118-804674.

2. AUCM<sup>1</sup>: “Advanced Use Case Modeling,” 2nd printing, by Frank Armor and Granville Miller, Pearson, April 2001. ISBN 0201615924.
3. Supplemental: “Systems Analysis and Design in a Changing World”, by John W. Satzinger, Robert B. Jackson, and Stephen D. Burd; 7th ed., 2016; Cengage Learning; ISBN 9781305117204.

## Labs

This course has a complementary lab component. During lab sessions, students are required to work on some practical system analysis problems and apply concepts that are learnt from lectures into lab sessions for these problems. Students are expected to attend lab sessions on time, complete the exercise and engage actively in the discussion.

## Assignments

There are THREE individual assignments, requiring students to apply system analysis techniques to analyze and model different aspects of a given system. Each assignment counts towards 10% of the final grade.

**Late policy:** Turn in your work early if there is any uncertainty about your ability to turn it in at the due time. Submissions up to 24 hours late will have their grade reduced by 25%; those up to 48 hours late will have their grade reduced by 50%. They will not be accepted for credit after two days.

## Project

Students need to complete a team project requiring them to perform analysis and design activities on a self-proposed system. The project team will comprise 5 to 6 students. Each team needs to submit a project proposal and a final report, and make a presentation by the end of the semester. Consultation sessions will be offered before the submissions of milestone deliverables so as to steer your project in the right direction. More details about the project will be provided later.

## Examination

A final exam will be administered in the official final exam period if the circumstances permit. Makeup examinations will be allowed only in cases of documented health or family emergencies or for official, university-sanctioned activities. The instructor reserves the right to use a percentage score of the other examinations to make up for missed examinations. Advanced notification of missing an examination is required. Any uncoordinated absence from the exam will result in a score of 0.

## Academic Integrity

Academic integrity entails absolute honesty in one’s intellectual effort. In general, students who are found cheating or plagiarizing other people’s work will immediately fail the course and be subject to further disciplinary actions. For more information, please refer to the following Website: <http://www.ust.hk/vpaa0/integrity/student-1.html>

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<sup>1</sup> Relevant topics will be scanned and posted on Canvas.

**Class Schedule** (*Tentative, last updated on Feb. 14, 2020*)

Week	Date	Topic	Lab	Remarks
1	Feb 21	<i>No Class</i>	Feb 20: No Lab	
2	Feb 24	Course Introduction <b>Planning:</b> Project Identification and Initiation	Feb 27: Introduction to Group Project	
	Feb 28	<b>Planning:</b> Feasibility Analysis		
3	Mar 2	<b>Analysis:</b> Requirement Analysis	Mar 5: Functional and Non-functional Requirements	
	Mar 6	Introduction to Unified Modeling Language and Use Case Modeling		
4	Mar 9	Business Process Modeling I: Base Use Case Description	Mar 12: Base Use Case Exercise	Mar 13: Group Formation Due
	Mar 13	Business Process Modeling II: Elaborated Use Case Description (Conditional)		
5	Mar 16	Business Process Modeling III: Elaborated Use Case Description (Extended and Included Use Cases)	Mar 19: Elaborated Use Case Exercise I	Mar 20: Project Proposal Due;  Assignment 1 Release
	Mar 20	Use Case Modeling Exercise		
6	Mar 23	Proposal Feedback I	Mar 26: Elaborated Use Case Exercise II	Mar 27: Assignment 1 Due
	Mar 27	Proposal Feedback II		
7	Mar 30	Introduction to Object Oriented Modeling	Apr 2: <i>No Lab</i>	
	Apr 3	Class Diagram I		
8	Apr 6	Class Diagram II	Apr 9: Class Diagram I	
	Apr 10	<i>Public Holiday</i>		
9	Apr 13	<i>Public Holiday</i>	Apr 16: Class Diagram II	Apr 17: Assignment 2 Release
	Apr 17	Class Diagram Exercise		
10	Apr 20	Sequence Diagram	Apr 23: Sequence Diagram	Apr 24: Assignment 2 Due
	Apr 24	Behavioral State Machine Diagram I		
11	Apr 27	Behavioral State Machine Diagram II	Apr 30: <i>Public Holiday</i>	Apr 27: Assignment 3 Release
	May 1	<i>Public Holiday</i>		

12	May 4	Exercise on Sequence Diagram and Behavioral State Machine Diagram	May 7: Behavioral State Machine Diagram	May 4: Assignment 3 Due
	May 8	Group Project Consultation I		
13	May 11	Group Project Consultation II	May 14: <i>No Lab</i>	
	May 15	Project Presentation I		
14	May 18	Project Presentation II		Project Final Report Due (May 18)