

ISOM3210: Information Systems Analysis and Design (Fall 2024)

Lecture: Dr. Xiaojun Zhang

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Office Hours: 1:30pm – 4:30pm on Friday and by appointment

Lab (LA1, LA2, LA3 and LA4): Mr. Chris S H TSE

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Office: LSK 4065

Office Hours: By appointment

Class Schedule ¹	Monday	Friday	Venue
L1	4:30pm – 5:50pm	12:00pm – 1:20pm	4582, Academic Building
L2	1:30pm – 2:50pm	9:00am – 10:20am	
L3	3:00pm – 4:20pm	10:30am – 11:50am	

Lab Schedule	Monday	Tuesday	Wednesday	Venue
LA1			12:00pm – 1:20pm	LSK 1005
LA2		10:30am – 11:50am		LSK G011
LA3		9:00am – 10:20am		LSK 1033
LA4	6:00pm – 7:20pm			LSK 1009

Course Website: <http://canvas.ust.hk>

1. Introduction

In today's digital landscape, characterized by rapid IT advancements and innovation, such as AI and Blockchain in revolutionizing system architecture and functionality, organizations must adeptly navigate new horizons in information technology while addressing the challenges inherent in implementing various information systems. This course provides an overview of planning the development of information systems through clearly understanding and specifying what a system should do and how various components of a system should work together. Through a blend of theoretical exploration and practical application, students will hone their skills in analyzing information system requirements and crafting innovative designs that align with organizational objectives. Join us on a transformative educational journey that empowers you to reshape the future of system analysis and design.

¹ For detailed information about class schedule, please refer to the table at the end of the syllabus.

2. Key Components of the Course

The course includes the following three key components:

- **Lectures (online and offline):** explain and discuss the key topics on system analysis and design and work on exercises and cases relevant to the topics
- **Labs:** mainly to guide students to work on advanced and practical system analysis problems
- **Team project:** provide students with hands-on experience in applying knowledge and skills learned in class to model an information system

3. Learning Outcomes (Adapted from Outcome Based Education (OBE): PILOs-BBA-IS)

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:

- Learn the course fundamentals on their own
- Produce professional quality business documents
- Deliver a professional quality presentation
- Communicate ideas persuasively to inform and convince others
- Understand 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
- Lead a team to success

4. Grading

- Comprehensive Assessment (45%)
 - Midterm (20%)
 - Final (25%)
- In-Class Assessment (10%)
- Online Learning and Exercises (10%)
- System Proposal (15%)
- Team Project Report (20%)

Comprehensive Assessment

Comprehensive assessments will be carried out midway and at the end of the semester to evaluate the extent to which students individually have grasped the key concepts presented in the course. Alternative assessment methods will be considered solely in instances of documented health or family emergencies, or for official university-sanctioned activities. In such cases, the instructor reserves the right to use a percentage score of the other assessment methods to make up for the missed comprehensive assessment. Advanced notification of missing the comprehensive assessment is required. Failure to complete the comprehensive assessment will result in a score of 0.

In-Class Assessment

Students are required to attend classes and labs adequately prepared, actively participating in discussions and group tasks. Your contributions are greatly valued, and thus marks for in-class assessments will be granted to those who demonstrate active engagement. The credit awarded for in-class assessment will be based on both the quality and quantity of your input.

Online Learning and Exercises

Students are required to study course materials posted on Canvas and complete the corresponding online exercises.

System Proposal and Project Report

Students must complete a team project requiring them to perform analysis and design activities on a proposed system. More details about the project will be provided.

5. Lab

Students are expected to work on more advanced and practical system analysis problems during lab sessions. It is essential to apply the concepts learned from both online and offline lectures to solve these problems in the labs. Punctuality is crucial; students should attend lab sessions on time, actively participate in discussions, and successfully complete the designated lab assignments.

6. 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, regardless of whether such behaviors take place online or offline, will immediately fail the course and be subject to further disciplinary actions. In addition, uploading, distributing or reselling this course's materials to any individuals and/or online platforms is considered copyright infringement and violation of Student Conduct Code for encouraging or facilitating academic dishonesty and misconduct. For more information, please refer to the following Website:

<http://ugadmin.ust.hk/integrity/student-1.html>

Class Schedule (*Tentative, last updated on August 20, 2024*)

<u>Week</u>	<u>Pre-Class Online Materials</u>	<u>Lecture</u>	<u>Lab</u>	<u>Readings</u>
1	Course Introduction and Project Initiation			
	<u>Reading Material:</u> System Request Template and the Concept of Feasibility Analysis	Sep 2: Course Introduction and Project Initiation	Sep 2 - 4: Introduction to the Course Logistics and Project	Ch. 1 Ch. 2
		Sep 6: System Request and Feasibility Analysis		
2	Requirement Analysis			
	<u>Lecture Video:</u> 3-1: Requirements analysis <u>CHMS Case Study Video:</u> 01: Functional and Non-Functional Requirements <i>Online Exercise: Identify the Functional and Non-Functional Requirements for CHMS</i>	Sep 9: Q&A for Online Materials (<i>Optional</i>)	Sep 9 - 11: Project discussion : Idea brainstorming	Ch. 3
		Sep 13: Review and Group Case Study: Requirement Analysis		
	Sep 15: Project Team Formation Due			

3	Intro to UML and Use Case Modeling / Object-Oriented Modeling			
	- Base Use Case Description			
	- Elaborated Use Case Description (Alternative and Conditional)			
	<u>Lecture Videos:</u> 4-1: Introduction to UML 4-2: Base Use Case 4-3: Conditional Flow <u>CHMS Case Study Videos:</u> 02a: Actor and Use Case Diagram 02b: Base Use Case 03: Conditional Flow <i>Online Exercise: Complete the Use Case Diagram and the Base Use Case Forms with Conditional Flows for CHMS</i>	Sep 16: Q&A for Online Materials (<i>Optional</i>) Sep 20: Review, Group Case Study and Exercises: Use Case Modeling	Sep 16, 17: Project discussion: Requirements Analysis <u>Make-up lab for LA1 on Sep 16 due to public holiday</u>	AUCM Ch. 7 Ch. 8 Ch. 9
Sep 26: Take-home Exercise: Campus Housing System ; Project Milestone 1 Due				
4	Object-Oriented Modeling (continued)			
	- Elaborated Use Case Description (Extending and Included Use Cases)			
	<u>Lecture Videos:</u> 5-1: Extending Use Case 5-2: Included Use Case <u>CHMS Case Study Videos:</u> 04a: Extending Use Case 04b: Included Use Case <i>Online Exercise: Suggest EUC and Identify IUC for CHMS</i>	Sep 23: Q&A for Online Materials (<i>Optional</i>) Sep 27: Review and Group Exercise: EUC and IUC	Sep 23-25: Project discussion : Mapping Requirements into Use Cases	AUCM Ch. 10
Oct 3: Project Milestone 2 Due				

5	Midterm Overview			
		Sep 30: Midterm Overview	Sep 30, Oct 1, 2: No Lab	
		Oct 4: Midterm Assessment Venue: TBA Time: 6:30pm – 8:30pm		
6	Class Diagram Overview			
	<u>Lecture Videos:</u> 8-1: Overview 8-2: Class, Attribute and Method 8-3: Relationship <i>Online Exercise: Develop the Class Diagram for a Clinic Appointment System</i>	Oct 7: Summarize Midterm Survey Review Class Diagram Concepts	Oct 7-9: Identify class diagram components	Ch. 5
		Oct 11: Public Holiday (no class)		
Oct 17 (11:59PM): Project Proposal Due				
7	Develop Class Diagram from Use Cases			
	<u>Lecture Videos:</u> 9-1: Rules 9-2: Identification of Classes, Attributes and Methods 9-3: Specification of Relationships	Oct 14: Q&A for Online Materials (<i>Optional</i>)	Oct 14-16: Class diagram practice	Ch. 5

		Oct 18: Group Exercise: Class Diagram of Campus Housing System		
Oct. 24 (11:59PM): First Peer evaluation due				
8	Sequence Diagram			
	<u>Lecture Videos:</u> 10-1: Introduction 10-2: Development 10-3: Highlights <u>CHMS Case Study Videos:</u> 06: Sequence Diagram of CHMS <i>Online Exercise: Draw a Sequence Diagram for One Use Case of CHMS</i>	Oct 21: Q&A for Online Materials (<i>Optional</i>) Oct 25: Review and Group Exercise: Sequence Diagram	Oct 21-23: Class Diagram wrap-up and Project discussion	Ch. 6

9	Behavioral State Machine (BSM)			
	<u>Lecture Videos:</u> 11-1 Introduction 11-2 Key Concepts <i>Online Exercise: Develop BSM for Tune Order and Book Order</i>	Oct 28: Q&A for Online Materials (<i>Optional</i>) Nov 1: Review and Group Exercise: BSM for Clinic Emergency Care and CHMS	Oct 28-30: Developing Sequence diagram	Ch. 6
10	Exercise: Class Diagram, Sequence Diagram and Behavioral State Machine Diagram			
	Final Exam Review			
	<u>Reading Material:</u> Dr. Chris Case	Nov 4: Q&A for Dr. Chris Exercise (<i>Optional</i>) Nov 8: Wrap up the Key Takeaway of Dr. Chris Exercise and Final Exam Review	Nov 4-6: Developing BSM Diagram and UML Summary	
	Project Work			
11		Nov 11 & 15: Project work (No lecture)	Nov 11-13: Project logistics	
12	Project Consultation			
		Nov 18 & 22: Project consultation (No lecture)	Nov 18-20: Project consultation (No Lab)	
13	Project Submission			
	Nov 28 (11:59PM): Project Final Report due Nov 30 (11:59PM): Second Peer Evaluation due			