THE CHINESE UNIVERSITY OF HONG KONG
Department of Systems Engineering & Engineering Management

Course Outline

1–3. Course code, English title and Chinese title

Course Code: SEEM 3430
Title in English: Information System Analysis and Design (ISAD)
Title in Chinese: <Nil>

4. Course description

Course description:

Information Systems are critical tools in today's business world. Therefore, its analysis and design are important to companies for effective business operations, eg for management of finance, inventory, logistics… etc. Information System Analysis and Design (ISAD) is an exciting active field in which analysts continually learn new techniques and approaches to develop information systems more effectively and efficiently.

There is a core set of skills, which all analysts need to know irrespective of approaches and methodology they use. All information systems project undergo four phases, namely planning, analysis, design and implementation.

All IS projects require analysts to collect requirements, model the business needs, and create blue prints for how the IS should be developed; and all projects require the understanding of organizational behavior concepts like change management and team building.

This course introduces the basic operational requirements and skills involved in the aforesaid four phases in ISAD. It is complemented by real case study, which enables students to put ISAD in practice.

5. Learning outcomes

Learning outcomes:

SEEM3430 students learn how to use formal tools and techniques based on DFD (Data- Flow-Diagram), ERD (Entity-Relationship-Diagram) and SC (Structural-Chart) to analyze and design new Information System

6. Course syllabus

Topic	Contents/ fundamental concepts
System Development Life Cycle (SDLC)	SDLC: Learn how an information system is developed in software industry
Dataflow Diagram (DFD)	DFD: Learn how to use graphical tools to analyze and design an information system
Entity Relationship Diagram (ERD)	ERD: Learn how to describe the sub-systems involved in the application and how they interact
Analysis and Design in practice	Group project to learn how to put the DFD & ERD skills in practice

7. Course components (Teaching modes and Learning activities)

Activity		# of Hours	Nature of Activities
Lecture	In Class	30	M
	Outside Class		
Interactive Tutorial	In Class	7	O
	Outside Class		
Group Project Report & Presentation	In Class	2 (0.5 hour / group)	M
	Outside Class	12	
Group Assignment	In Class		
	Outside Class	9	M

8. Assessment type, percentage and rubrics Assessment Scheme

Assessment type	Percentage

• Group Assignment & Group Project
  ○ Class Participation (e.g. Discussion) and Tutorial Assignments | (if any)
  ○ Group Project (Phase I, II & III Group Assignment Submission + Group Presentation)
• Exam
	• 50%
	• 50%

Assessment rubrics

Project Detailed Rubric Criteria: (Group Project: Final Report, Demo & Presentation)

1. System Introduction (20%)

Criteria	Excellent (16-20)	Good (11-15)	Fair (6-10)	Poor (0-5)
Clarity	Introduction is clear and engaging.	Introduction is mostly clear.	Introduction lacks clarity.	Introduction is confusing or unclear.
Context	Provides a comprehensive context.	Provides adequate context.	Context is minimal or vague.	No context provided.
Objective	Clearly states objectives.	States objectives, but lacks detail.	Objectives are unclear.	No objectives presented.

2. Requirement Specification (20%)

Criteria	Excellent (16-20)	Good (11-15)	Fair (6-10)	Poor (0-5)
Completeness	All requirements are detailed.	Most requirements are detailed.	Some requirements are missing or vague.	Many requirements are missing.

Clarity	Requirements are clearly defined.	Some requirements lack clarity.	Many requirements are unclear.	Requirements are poorly defined.
Feasibility	Requirements are realistic and achievable.	Mostly realistic requirements.	Some unrealistic requirements.	Requirements are not feasible.

3. System Analysis (20%)

Criteria	**Excellent (16-20)**	**Good (11-15)**	**Fair (6-10)**	**Poor (0-5)**
Depth of Analysis	In-depth analysis of the system.	Good analysis, but lacks depth.	Limited analysis with gaps.	No meaningful analysis.
Tools & Techniques	Utilizes appropriate tools effectively.	Uses some tools appropriately.	Limited use of tools.	No tools or techniques used.
Insightfulness	Provides valuable insights.	Some insights provided.	Few insights or unclear connections.	No insights offered.

4. System Implementation (20%)

Criteria	**Excellent (16-20)**	**Good (11-15)**	**Fair (6-10)**	**Poor (0-5)**
Implementation Plan	Clear, concise, and engaging implementation steps of the system.	Adequate implementation steps with minor clarity issues.	Implementation Steps is vague or unclear.	No clear implementation plan provided.
Functionality	Fully functional system.	Mostly functional with minor issues.	Some functionality present, many issues.	System is non-functional.
Workflow Clarity	Workflow is clearly illustrated and easy to understand, showing logical flow.	Workflow is mostly clear, with minor ambiguities.	Workflow is confusing or poorly illustrated.	No workflow provided.

5. Presentation and Q&A (20%)

Criteria	**Excellent (16-20)**	**Good (11-15)**	**Fair (6-10)**	**Poor (0-5)**
Presentation Skills	Engaging and confident delivery.	Clear delivery with minor issues.	Delivery lacks confidence.	Poor delivery, hard to follow.
Content Knowledge	Demonstrates thorough understanding.	Good understanding of content.	Some knowledge, but lacks depth.	Lacks understanding of content.

Q&A Handling	Responds effectively to questions.	Responds to most questions well.	Limited responses to questions.	Unable to respond to questions.

6. Optional Bonus (10%) | Overall Submission and Consideration Completeness

Criteria	**Excellent (8-10)**	**Good (5-7)**	**Fair (3-4)**	**Poor (0-2)**
Overall Quality	Submission is polished and complete.	Mostly polished with few issues.	Submission is incomplete or lacks polish.	Submission is poor and lacks completeness.
Consideration	Thoughtful consideration of all aspects.	Good consideration of most aspects.	Limited consideration shown.	No consideration evident.

Total:

- 100% (including optional bonus)

This rubric provides a structured way to assess each area of the project, ensuring that all critical components are evaluated fairly.

9. Required and recommended readings/ Learning Resources
(List textbooks, reference books, articles, etc. Include class website URL)

Required readings

- Textbook: Systems Analysis and Design, 7th Edition by Roberta M. Roth, Alan Dennis, Barbara Haley Wixom Publisher: John Wiley and Son.
- References: to be provided in the lecture notes.
- Website: blackboard

Recommended readings:
Van Gemert, D. (2013). Systems engineering the project. Paper presented at PMI® Global Congress 2013—North America, New Orleans, LA. Newtown Square, PA: Project Management Institute.

10. Feedback for evaluation

Feedback for evaluation:

- CUHK Blackboard Email
- By Appointment
- Course Evaluation Form

11. Course schedule

Class/ week	Date	Topic	Requirements
1	2Sep2024 ERB 703 (Mon 4:30-5:15pm)	Systems Analyst and Information Systems Development	Chapter 1
	5Sep LPN LT (Thu 4:30-6:15pm)	Systems Analyst and Information Systems Development	Chapter 1
2	9Sep (Mon)	Systems Analyst and Information Systems Development	Chapter 1
	12Sep (Thu)	Systems Analyst and Information Systems Development	Chapter 1
3	16Sep (Mon)	Project Selection and Management	Chapter 2
	19Sep (Thu)	Project Selection and Management	Chapter 2
	23Sep (Mon)	<Lecturer not Available | International Conference>	
4	**25Sep (Wed)** **9:30-10:15AM ERB 713**	Project Selection and Management	Chapter 2
	26Sep (Thu)	Project Selection and Management	Chapter 2
5	30Sep (Mon)	Requirement Determination	Chapter 3
	3Oct (Thu)	Requirement Determination	Chapter 3
6	7Oct (Mon)	User Case	Chapter 4
	10Oct (Thu)	User Case	Chapter 4
7	14Oct (Mon)	<Guest Lecture>	
	17Oct (Thu)	Process Modeling	Chapter 5
	20Oct (Sun)	Phase 1: Background Research Due	Submission
8	21Oct (Mon)	Process Modeling	Chapter 5
	24Oct (Thu)	Process Modeling	Chapter 5
9	28Oct (Mon)	Data Modeling	Chapter 6
	31Oct (Thu)	Data Modeling	Chapter 6
10	4Nov (Mon)	Data Modeling	Chapter 6
	7Nov (Thu)	Data Modeling	Chapter 6
11	11Nov (Mon)	Moving into Design	Chapter 7
	14Nov (Thu)	Moving into Design	Chapter 7
	17Nov (Sun)	Phase 2: System Spec Due	Submission
12	18Nov (Mon)	Moving into Design	Chapter 7
	21Nov (Thu)	Moving into Design	Chapter 7
	25Nov (Mon)	<Lecturer not Available | International Conference>	
	28Nov (Thu)	<Lecturer not Available | International Conference>	
	1 Dec	Phase 3: Final Report Due	Submission
13	**2Dec (Mon)** **1:30-7:30 PM ERB 401**	Make up Class + Demo Presentation + Exam	

12. Contact details for teacher(s) or TA(s)

Professor/Lecturer/Instructor:	
Name:	Prof. Dr. Kelvin WAN, PMP
Office Location:	SEEM Office, Room 609, William MW.Mong Engineering Building
Telephone:	(852) 3943 8470 (General Enquiries)
Email:	kelvinwan@gmail.com
Teaching Venue:	ERB703 / LPN LT
Website:	https://www.linkedin.com/in/dr-kelvin-wan-pmp-91bb6012/
Other information:	<Nil>

Teaching Assistant/Tutor:	***CAO, Jingtao*** *Address: Room 615, ERB* *Office Hour: Wednesday 4:00-5:00 pm* *Telephone: 6405-3272* *Email: jcao@se.cuhk.edu.hk* ***Wang,Tianzi*** *Address: Room 615, ERB* *Office Hour: Friday 5:00-6:00 pm* *(https://cuhk.zoom.us/j/2936279354?omn=95565940021)* *Telephone: 9202-0644* *Email: twang@se.cuhk.edu.hk* ***Chen, Qianyu*** *Address: Room 709(D), ERB* *Office Hour: Friday 5:00-6:00 pm* *Telephone: 5429-7600* *Email: socqyc@link.cuhk.edu.hk* ***Wang,Rui*** *Address: Room 615, ERB* *Office Hour: Friday 5:00-6:00 pm* *Telephone: TBA* *Email: rwang@se.cuhk.edu.hk*

13. Details of course website

https://www1.se.cuhk.edu.hk/~seem3430/

14. Academic honesty and plagiarism

Academic honesty and plagiarism

Attention is drawn to University policy and regulations on honesty in academic work, and to the disciplinary guidelines and procedures applicable to breaches of such policy and regulations. Details may be found at http://www.cuhk.edu.hk/policy/academichonesty/.

With each assignment, students will be required to submit a signed declaration that they are aware of these policies, regulations, guidelines and procedures.

- In the case of group projects, all members of the group should be asked to sign the declaration, each of whom is responsible and liable to disciplinary actions, irrespective of whether he/she has signed the declaration and whether he/she has contributed, directly or indirectly, to the problematic contents.

- For assignments in the form of a computer-generated document that is principally text-based and submitted via VeriGuide, the statement, in the form of a receipt, will be issued by the system upon students' uploading

of the soft copy of the assignment.

- Students are fully aware that their work may be investigated by AI content detection software to determine originality.

- Students are fully aware of the AI approach(es) adopted in the course. In the case where some AI tools are allowed, students have made proper acknowledgment and citations as suggested by the course teacher.

Assignments without a properly signed declaration will not be graded by teachers.

Only the final version of the assignment should be submitted via VeriGuide.

The submission of a piece of work, or a part of a piece of work, for more than one purpose (e.g. to satisfy the requirements in two different courses) without declaration to this effect shall be regarded as having committed undeclared multiple submissions. It is common and acceptable to reuse a turn of phrase or a sentence or two from one's own work; but wholesale reuse is problematic. In any case, agreement from the course teacher(s) concerned should be obtained prior to the submission of the piece of work.

15. Use of Generative Artificial Intelligence (AI) Tools in Teaching, Learning and Assessment

Use of generative AI tools
(Teachers should include information relevant to the approach to be adopted in the course here)

☑Approach 1 - All use of AI tools is prohibited in assignments and assessment tasks or

☒Approach 2 - Use of some AI tools is allowed or

☒Approach 3 - Use of AI tools is allowed with explicit acknowledgement and proper citation or

☒Approach 4 - Use of some AI tools is allowed with no acknowledgement

Sep2024

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