THE UNIVERSITY OF HONG KONG
FACULTY OF BUSINESS AND ECONOMICS

School of Business
BUSI0059A / IIMT3602A Information Systems Analysis and Design
2016-2017, Semester 1

General Information

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Laboratory Sessions
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Course Co-requisites
BUSI1003 Introduction to Management Information Systems / IIMT2601 Management Information Systems ***or*** CSIS1127 Introduction to Information Systems

Course Website
Moodle

Course Description

This course aims to develop an understanding of the concepts of systems analysis and design. Various systems development methodologies will be elaborated and discussed. CASE tools will be demonstrated to illustrate how to construct a variety of system design documents (e.g., data flow diagrams, use cases and activity diagrams). Issues of systems implementation will be discussed. Students will integrate and apply their knowledge to real world situations to analyze and design information systems. This course will use a combination of lectures, laboratory sessions, assignments and projects. The lectures will cover important concepts, issues, and case studies on the topics discussed. The laboratory sessions will teach students knowledge and techniques using CASE tools to design information systems as required in the course.

Topics to be covered in the course include:

- Introduction to Systems Analysis and Design
- Systems Development Methodology
- Requirements Analysis
- Use Case Analysis
- Process Modeling and Data Flow Diagrams
- Database Design and Data Modeling
- Class and Methods Design
- Systems Design
- User Interface Design
- Managing Implementation

Course Objectives

1. To learn the basic concepts of information systems analysis, design and implementation
2. To learn the major alternative methodologies used in developing information systems and the consideration involved in choosing which methodology to use
3. To learn how to use various information gathering techniques for eliciting user information requirements and system expectations
4. To learn how to use the CASE tools to support business analysis and systems design
5. To learn how to construct and interpret a variety of system design documents, including use cases, process diagrams, data flow diagrams, class diagrams
6. To learn how to search and read the latest articles related to the systems analysis and design
7. To work in teams effectively

Programme Learning Outcomes

PLO1: Acquisition and internalization of knowledge of the programme discipline
PLO2: Application and integration of knowledge
PLO3: Inculcating professionalism and leadership
PLO4: Developing global outlook
PLO5: Mastering communication skills

Course Learning Outcomes

Course Learning Outcomes	*Aligned Programme Learning Outcomes*
CLO1. Describe and explain the concepts of information systems analysis and design	PLO 1,2,3,4,5
CLO2. Evaluate and apply different information systems analysis and design methodologies to support systems development	PLO 1,2,3,4
CLO3. Apply various information gathering techniques for eliciting user information requirements and system expectations	PLO 1,2,3
CLO4. Describe and explain the concepts and issues concerned with implementing information systems	PLO 1,2,3,4,5
CLO5. Describe and explain how to use CASE tools to support systems analysis and design	PLO 1,2,3,4,5
CLO6. Construct and interpret a variety of system design documents, including data flow diagram, entity relationship diagrams	PLO 1,2,3,4,5

Course Teaching and Learning Activities

Course Teaching and Learning Activities	*Expected contact hour*	*Study Load (% of study)*
T&L1. Lecture and interactive presentation	33	25%
T&L3. Lab tutorials, demonstrations & assignments	12	10%
T&L4. Project	48	40%
T&L5. Self-study	30	25%
Total	*123*	*100%*

Assessment Methods and Weightage

Assessment Methods	*Brief Description*	*Weight*	*Aligned Course Learning Outcomes*
A1. Assignments	Laboratory and class assignments to demonstrate learning of tools & techniques	30%	CLO 1,2,5
A2. Group Project	Systems analysis and design for a real world situation.	30%	CLO 3,5,6
A3. Group Project Presentation & Individual Report	Project presentation and report	10%	CLO 3,5,6

A4. Individual Class Participation	Contribution towards an interactive learning environment	10%	CLO 1,2,3,4,5,6
A5. Written Examinations	Demonstration of knowledge of CLOs	20%	CLO 1,2,3,4,5,6
	Total	*100%*	

Assessment Standards

Course Grade Descriptors

Course Grade	*Description*
A+, A, A-	Candidate has consistently demonstrated a thorough grasp of the subject as evidenced by original or exceptionally astute analysis and thought, as well as a critical interpretation and presentation of the principles and concepts of this course.
B+, B, B-	Candidate has frequently demonstrated a substantial grasp of the subject as demonstrated by astute analysis and thought, as well as substantial evidence of critical interpretation and presentation of principles, concepts and arguments presented within this course.
C+, C, C-	Candidate has occasionally demonstrated a reasonable grasp of the subject as demonstrated by largely derivative analysis and thought, as well as some evidence of critical interpretation and presentation of principles, concepts and arguments presented within this course.
D+, D	Candidate has demonstrated partial grasp of the subject as demonstrated by superficial analysis and thought, as well as little critical interpretation and presentation of principles, concepts and arguments presented within this course.
F	Candidate has demonstrated a poor grasp of the subject as demonstrated by largely inaccurate analysis, as well as incorrect presentation of principles, concepts and arguments presented within this course.

Session Assignments (30%)

You will be given assignments to be accomplished in each laboratory session. Various software development CASE tools will be demonstrated in the laboratory sessions. Each student is expected to follow the tutor's instruction to use the tools to complete the exercises. In addition, case studies related to information systems will be provided to enable you to identify the key issues and propose recommendations to solve the problems for the case scenario. In class assignments will include case study analysis, exercise questions, topic presentations and debates.

Grading Criteria

CLO	*Aligned with CLO 2,5,6*
A+, A, A-	All key problems are identified, with insightful and detailed analyses, sufficient supported with relevant data/facts, effective application of concepts and theories, well thought-out and feasible recommendations, and excellent writing.

B+, B, B-	Most of the key problems are identified, generally insightful and detailed analyses, appropriate use of relevant data/facts, acceptable application of concepts and theories, generally logical and feasible recommendations, and decent writing.
C+, C, C-	A few key problems are identified, somewhat insightful and detailed analyses, insufficient use of relevant data/facts, limited application of concepts and theories, mediocre and infeasible recommendations, and marginally acceptable writing.
D+, D	No problems are identified, with weak analyses, insufficient use of relevant data/facts, weak application of management concepts and theories, mediocre and infeasible recommendations, and unacceptable writing.
F	Unacceptable analyses and writing.

Group Project (30%)

This will be a team exercise and you are required to form **groups of four to six students** to conduct systems analysis and design. This project should be a **'Live' project** for either for an organization in Hong Kong or for the development of a new mobile app venture of your choice. The instructor may also organize a few live projects from start-ups based in Hong Kong, India and the US. You will need to first submit a proposal of what you are going to do for approval prior to conducting your studies. When finished, you will need to submit a report. Detailed instructions will be given in due course.

Grading Criteria

CLO	*Aligned with CLO 1,2,3,5,6*
A+, A, A-	All key requirements are identified, with insightful and detailed analyses and design, sufficient supported with relevant data/facts, effective application of concepts and theories, well thought-out and feasible recommendations, and excellent writing.
B+, B, B-	Most of the key requirements are identified, generally insightful and detailed analyses and design, appropriate use of relevant data/facts, acceptable application of concepts and theories, generally logical and feasible recommendations, and decent writing.
C+, C, C-	A few key requirements are identified, somewhat insightful and detailed analyses and design, insufficient use of relevant data/facts, limited application of concepts and theories, mediocre and infeasible recommendations, and marginally acceptable writing.
D+, D	Minor requirements are identified, with weak analyses and design, insufficient use of relevant data/facts, weak application of management concepts and theories, mediocre and infeasible recommendations, and unacceptable writing.
F	Incorrect requirements identified, with unacceptable analyses and design, and unacceptable writing.

Project Presentation and Individual Report (10%)

You are required to present your project in the project presentation. You need to submit an individual report after your presentation. You will be provided details regarding the individual report in due course

Grading Criteria

CLO	*CLO 1,2,3,4,5,6*
A+, A, A-	Professional presentation style, comprehensive content coverage, well-articulated on critical issues, effective use of management concepts, and quality interaction with audience.
B+, B, B-	Decent presentation style, appropriate content coverage, clear discussion of critical issues, moderately effective use of management concepts, and acceptable interaction with audience.
C+, C, C-	Mediocre presentation style, limited content coverage, marginally acceptable discussion of critical issues, infrequent use of management concepts, and limited interaction with audience.
D+, D	Weak presentation style, key content omitted, unclear focus on critical issues, very limited use of management concepts, and poor interaction with audience.
F	Unacceptable presentation style, questionable content coverage, omitting critical issues, zero use of management concepts, and no interaction with audience.

Individual Class Contribution (10%)

Our course is not a spectator sport. With case discussions and guest visitors, preparation and active participation are essential. This will be graded according to students' overall contribution during lectures, case study discussions, laboratory sessions and guest seminar. Participation in our online forums (Moodle, Twitter, WhatsApp and Blog comments) is also necessary. An interactive learning environment can facilitate effective teaching and learning.

Grading Criteria

CLO	*Aligned with CLO 1,2,3,5,6*
A+, A, A-	Consistently demonstrates a thorough understanding of, and engages constructively with, course material (assigned readings, issues, concepts), provides insightful analyses, raises critical points, and deepens and advances class discussion.
B+, B, B-	Mostly, demonstrates a good understanding of, and engages constructively with course material, provides helpful points or asks questions that support class discussion.
C+, C, C-	Demonstrates a basic understanding of course material and engages with it, though not always successfully. Makes a positive contribution to the group discussion.
D+, D	Demonstrates limited understanding of course material and engagement with it. Endeavors to contribute to group discussion, but adds little.
F	Student does not attend sessions. Or if student does attend, he or she demonstrates little or no understanding of course material, lacks engagement with it, or makes little or no effort to contribute to group discussion.

Written Examinations (20%)

Two written examinations will be provided to students. The questions will require application of methodologies and tools to solve case problems. These will test your comprehension of the techniques, knowledge and capability to generate ideas for systems analysis, design and planning for systems development project. Detailed instructions will be given in due course.

Grading Criteria

CLO	*Aligned with CLO 1,2,3,5,6*
A+, A, A-	All key requirements are identified, with insightful and detailed analyses and design, sufficient supported with relevant data/facts, effective application of concepts and theories, well thought-out and feasible recommendations, and excellent writing.
B+, B, B-	Most of the key requirements are identified, generally insightful and detailed analyses and design, appropriate use of relevant data/facts, acceptable application of concepts and theories, generally logical and feasible recommendations, and decent writing.
C+, C, C-	A few key requirements are identified, somewhat insightful and detailed analyses and design, insufficient use of relevant data/facts, limited application of concepts and theories, mediocre and infeasible recommendations, and marginally acceptable writing.
D+, D	Minor requirements are identified, with weak analyses and design, insufficient use of relevant data/facts, weak application of management concepts and theories, mediocre and infeasible recommendations, and unacceptable writing.
F	Incorrect requirements identified, with unacceptable analyses and design, and unacceptable writing.

Course Schedule

Note that is schedule is tentative and subject to change. You will be notified of the submission dates for assignments and examinations in due course.

Week	*Topic*	*Readings*
1	Introduction to Systems Analysis and Design & Systems Development Methodologies	Ch. 1, 2
2	Functional & Non-Functional Requirements Analysis	Ch. 3, 11
3	Business Process Modeling	Ch. 4
4	Business Process Modeling and UI/UX Design	Ch. 10
5	Data Flow Diagrams and Structural Modeling	Readings from external sources
6	Structural Modeling	Ch. 5
7	Behavioral Modeling	Ch. 6
8	System Design and Class & Method Design	Ch. 7, 8

9	Class and Method Design	Ch. 8
10	Database Design & Review	Ch. 9
11	Project Presentations	

Course Material

Mandatory Readings

1. ***Systems Analysis and Design with UML*** **(Fourth Edition), by D. Tegarden, A. Dennis, and B.H. Wixom, (2012, Wiley, ISBN: 978-1-1180-9236-1)** {E-book available from HKU Bookstore}
2. Course website.
3. Selected chapters from various books and selected whitepapers and articles from journals, magazines and newspapers will be posted on course website or distributed in class.

Optional References and Readings

There are several online sources and books that you may choose to refer. Below is an indicative list of resources. Participants are encouraged to share other sources that they find useful on the course website.

1. *Modern Systems Analysis and Design* (Sixth Edition) by J. Hoffer, J. George and J. Valacich, (2011, Prentice Hall, ISBN: 978-0-13-608821-9)
2. *Systems Analysis and Design* (Eighth Edition) by K.E. Kendall and J.E. Kendall, (2010, Prentice Hall, ISBN: 978-0-13-608916-2)
3. Professional methodologies best practices by the Office of the Government Chief Information Officer (OGCIO) at http://www.ogcio.gov.hk/en/infrastructure/methodology/index.htm
4. Additional, optional reading materials will also be posted on the course website, blogged at http://abhishekkathuria.wordpress.com/ or tweeted at https://twitter.com/brainsparkz

Processes for Student Feedback

In addition to the SETL process at the end of the semester, participants are encouraged to provide feedback anonymously through Moodle or verbally to the tutor during the semester.

Course Policies

Project Submissions

Project reports are to be turned in on or before 8:00 am of the due date. Late reports will have points taken off (10% of base mark per day).

Attendance and Late Entry

We treat our sessions as a business meeting and will start on time and try to end on time; if you are unable to attend a session, please let me know not to expect you by informing me beforehand by email. Though attendance of all lectures is not mandatory, it is strongly encouraged, and the questions in examinations will cover topics discussed in the lectures. Coming late to class, or exit and entrance during class sessions is severely discouraged unless pre-arranged.

The written examinations are not to be missed unless under exceptional cases.

Class Discipline

Please maintain the decorum of the class sessions. I expect a level of commitment and professionalism commensurate with that expected in a business meeting. Please be prepared to actively participate in an interesting, rigorous, challenging, fun, and valuable session. The class environment will be informal and questions are welcome and encouraged. However, do not have side conversations during class. It is distracting and class suffers.

We may have guest speakers in this class. Please be courteous to our guests.

In-class Technology Usage

Though I am a technophile with a tremendous appreciation of technology, research shows that computer and smartphone usage by students during class disturbs other students except during activities when the usage is explicitly part of learning. Thus, please keep technology (computers, tablets, or smartphones) usage in class to a minimum. Using technology for taking notes is acceptable. However, please do not surf, tweet, or email during class unless we are conducting an activity that calls for such actions. Remember to mute your cellphone and other communications devices.

Communication

E-mail is my preferred mode of communication. Please send me an email if you need to set up an appointment to discuss any issues. You may also catch me on Skype, Twitter, Facebook or LinkedIn. I check my email regularly and expect students to do so as well. Please also ensure that you check the class website periodically as we will make course related announcements on it.

Note: Please put ISAD at the start of the subject line in any e-mail to me concerning this course.

Academic Integrity

As a member of this course, you agree to be bound by the university regulations on academic dishonesty. Plagiarism and copying of copyright materials are serious offences and may lead to disciplinary actions. There is a zero tolerance policy for violations of the university regulations in this course. Violations by any one student are unfair to all other students and go against the values of the

instructor, the program, the school, and the university. Remember to attribute all sources, including web sources. Do not plagiarize papers or reports, and do not submit the same paper to multiple courses. For detailed procedures related to plagiarism, please refer to the URL: http://www.hku.hk/plagiarism/page2s.htm

Note that all handouts, exams and materials (physical and electronic copies) that will be provided in this class are for your own personal class use. These materials should not be reproduced or distributed in any form or media.