MAKERERE UNIVERSITY

School OF COMPUTING & INFORMATION TECHNOLOGY

Course Name: Systems Analysis and Design (4CU)

Course Code: IST1204

Course Duration: [1*4 Teaching Weeks & 3 Examination Weeks***]**

Course Lecturer: Dr. Peter Wakholi[1] (PhD. Information Sciences, University of Bergen, Msc. Information Systems, London SouthBank University, BSc Hons, Computer Science)

Classes: B.Sc. Software Engineering (Day and Evening)

1 Course description

This course discusses the processes, methods, techniques and tools that organizations use to determine how they should conduct their business, with a particular focus on how computer-based technologies can most effectively contribute to the way business is organized. The course covers a systematic methodology for analyzing a business problem or opportunity, determining what role, if any, computer based technologies can play in addressing the business need, articulating business requirements for the technology solution, specifying alternative approaches to acquiring the technology capabilities needed to address business requirements, and specifying the requirements for the information systems solution in particular, in-house development, development from third-party providers, or purchased commercial-off-the-shelf (COTS) packages.

2 Course Aims and Objectives

This course aims to:

1. make students understand the types of business needs that can be addressed using information technology-based solutions
2. equip students with the skills of initiating, specifying, and prioritizing information systems projects and for determining various aspects of feasibility of these projects
3. introduce to students problems, opportunities, or mandates that initiate projects
4. introduce to students different methodologies for: analysing a business situation (problem or opportunity); modelling it using formal techniques; and specifying requirements for a system that enables a productive change in a way the business is conducted

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5. equip students with the skills of writing clear and concise business requirements documents that can be converted into technical specifications within the context of the methodologies they learn
6. equip students with skills for: communicating effectively with various organizational stakeholders, collecting information using various techniques, and conveying proposed solution characteristics to the stakeholders
7. equip students with the skills needed to manage information systems projects using formal project management methods
8. introduce students to various systems acquisition alternatives, including packaged systems (such as ERP, CRM, SCM, etc.) and outsourced design and development resources
9. equip students with the skills for using contemporary CASE tools in process and data modelling
10. introduce students to the principles leading to high levels of security and user experience from the beginning of the systems development process
11. equip students with the skills needed for developing high-level logical system characteristics
12. Introduce students to the ethical, cultural, and legal issues and their feasibilities among alternative solutions.

3 Learning Outcomes

Students who undertake this course should be able to:

1. Describe the types of business needs that can be addressed using information technology-based solutions within an organisation;
2. To understand relationships between IS and organization;
3. To understand systems development methodologies and use them for analyzing a business situation (a problem or opportunity), modeling it using a formal technique, and specifying requirements for a system that enables a productive change in a way the business is conducted;
4. To use object orientation and other IS modelling techniques;
5. To create various system diagrams for creating SA&D documentation using CASE tools;
6. To conduct application software domain analysis and define IS requirements in a clear and concise manner, and convert them into technical specifications within the methodologies that they learn;
7. To design processes, data, user interface and other IS aspects;
8. To initiate, specify, and prioritize information systems projects and determine various aspects of feasibility of these projects;

9. To use software for managing system development projects;
10. To use software for creating documentation for SA&D;
11. Design high-level logical system characteristics (user interface design, design of data and information requirements).

4 Lesson Plan

Lecture	Topic	Assignments
1	• Chapter 1: Introduction to Systems Analysis and Design	Chapter Exercises
2	• Chapter 2: Analyzing the Business Case	Chapter Exercises
3	• Chapter 3: Managing Systems Projects	SCR Associates, Case Studies
4	• Chapter 4: Requirements Modeling	Chapter Exercises
5	• Chapter 5: Data and Process Modeling	Chapter Exercises
6	• Chapter 6: Object Modeling	Critical Thinking Challenge, Toolkit 3
7	• Chapter 7: Development Strategies	Chapter Exercises
8	• Chapter 8: User Interface Design	Chapter Exercises
9	• Chapter 9: Data Design	Chapter Exercises
10	• Chapter 10: System Architecture	Critical Thinking Challenge, Case Studies
11	• Chapter 11: Managing Systems Implementation	Video Learning Session, Toolkit 2, SCR Case Associates

5 Teaching and learning patterns:

This is a very practical course. Students will be required to attend lecture hours and implement the concepts learned in an assignment. Quizzes will be completed in MUELE after each topic, therefore students should keep pace with the classes. Case studies will be used at the end of each topic so as to encourage students to apply their learning. Marks will be awarded for

attendance. All work will be posted on MUELE, including assignments. Each student is expected to have an account.

6 Assessment:

- Coursework:
  - End of Chapter exercises – 20%
  - Group assignments – 20%
- Exam – 60 %

7 Core Literature

System Analysis and Design - 11th Edition by Harry J Rosenblatt, Shelly Cashman Series, 2019, ISBN: 978-1-285-17134-0, ISBN10: 1-285-17134-9, ISBN13: 978-1-285- 17134-0

7.1 Other References:

You are advised to read widely. There are a lot of books that contain materials on System analysis and design. What is important is that you understand the concepts. The following books are recommended.

1. Hawryszkiewycz, I.T., 2001. Introduction to Systems Analysis and Design (5th Edition). Publisher: Prentice Hall.
2. Shouhong Wang and Hai Wang, 2012. Information Systems Analysis and Design. Publisher: Universal-Publishers
3. Kenneth E. Kendall, Julie E. Kendall, 1999. Systems Analysis and Design
4. Hoffer, 2012. Modern Systems Analysis and Design, 5/e, Pearson Education.

8 Lecture Times

The Day and evening classes will be combined on – Thursdays 2:00PM to 6:00PM. The first class will be on 7th November 2021. In the event that physical classes resume, the line will be

- Evening Class – Thursdays 5:00 PM to 8:00PM
- Day Class – Thursdays 2:00PM to 5:00PM

9 Zoom link for classes

Peter Wakholi is inviting you to a scheduled Zoom meeting.

Topic: BIS 1206 System Analysis and Design
Time: This is a recurring meeting Meet anytime

Join Zoom Meeting
https://us02web.zoom.us/j/84454386843?pwd=aDlVQWdtUWdIRHFGbDRZeHhmcGE1QT09

Meeting ID: 844 5438 6843
Passcode: 790173
One tap mobile
+16699006833,,84454386843#,,,,*790173# US (San Jose)

+12532158782,,84454386843#,,,,*790173# US (Tacoma)

Dial by your location
        +1 669 900 6833 US (San Jose)
        +1 253 215 8782 US (Tacoma)
        +1 301 715 8592 US (Washington DC)
        +1 312 626 6799 US (Chicago)
        +1 346 248 7799 US (Houston)
        +1 408 638 0968 US (San Jose)
        +1 646 876 9923 US (New York)
Meeting ID: 844 5438 6843
Passcode: 790173
Find your local number: https://us02web.zoom.us/u/kxZjTmXCg