MULTIMEDIA UNIVERSITY OF KENYA
P.O. Box 15653 - 00503, Mbagathi, Nairobi Tel: +254 020 2071391, +254 020 724257083, +254 020 735900008 Fax: +254 020 2071243Email:**info@mmu.ac.ke**
Leader in Innovative Technology

FACULTY OF COMPUTING & INFORMATION TECHNOLOGY
DEPARTMENT OF INFORMATION TECHNOLOGY
COURSE OUTLINE

Code & Name	ICS 2213 and ICS 2210: System Analysis and Design
Prerequisite	None
Cohort	APCS Y2S1 AC & IC Y2S1 2021
Lecturer	Joshua Wakhu
Contact	0727 981 780 jgwakhu2018@gmail.com

Purpose
Introduce the concepts, tools and techniques of systems analysis and design.

Learning outcomes
At the end of this course the student should be able to:
- Appraise the business context of Systems Analysis and Design projects.
- Describe a typical Systems Development Life Cycle (SDLC) and other systems development methodologies.
- Discuss the concepts, principles and terminology of the structured System Analysis and Design paradigm.
- Perform a structured systems analysis and design activity on a small-scale system.

Course Description
Introduction: The concept of Systems Analysis and Design (SAD).Structured Analysis and Design.Systems Development Life Cycle (SDLC).Systems Development Methodologies.Modelling Requirements: Domain Analysis, Requirements Analysis, Requirements Modelling. Process Modelling: Data Flow Diagrams, Specifying processes, Process Description Tools, Logical Versus Physical Models. Logical Data Modelling: Identifying Entities, Entity Relationship Diagrams. Relational Data Analysis: Normalization. System Design: Design Strategies, Developing the Design Plan, and Moving from Logical to Physical Models. Program Design: Structure charts, Program Specification. User Interface, Input, and Output Design: User Interface Design, Input Design, Output Design Issues, and Printed Output. Implementation and Maintenance Phase: Installation and Testing, developing documentation, file conversion, system changeover strategy i.e. conversion strategy, preparation of business contingency plan, staff training, and post implementation activities:-

Teaching Methodologies
Lectures, Practical, Case Assignments, Tutorials, Demonstrations, project and Class presentations.

Instructional Materials/Equipment
Online class presentations

Course Content

WEEK	TOPIC	OUTLINE
Week 1	Introduction	The concept of systems analysis and design, the impact of information technology**,** systems analysis and design, information systems and components, understand the business, current trends ,impact of the internet
Week 2	Introduction	System analysis and design: Definitions of SA, SD SA(list); functions and roles of SA(list); required skills of a system analyst; structured system analysis, systems development life cycle (SDLC), project planning, analysis, design, implementation, support;
Week 3	Approaches in SAD	SDLC – description of a project, SDLC process; theories of system development – traditional approach, RAD, the structured approach; IS development phases – project planning, analysis, design, implementation, support; project identification and initiation; feasibility analysis; Methodologies, Models, Tools, And Techniques in SDLC
Week 4	Analysis Phase	Requirements determination: process of determining requirements, requirements definition statement. Requirements elicitation techniques: joint application development, questionnaires, documents analysis, observation Requirements analysis strategies: problem analysis, root cause analysis, duration analysis, activity-based costing, outcome analysis, technology analysis, activity elimination. Use case analysis: elements of Use Case, formats, Use Case and functional requirements, use cases and testing, building use cases.
Week 5	Process modeling Data modeling	Data Flow Diagrams: Creating the Context diagram, creating data flow diagram fragments, levels of data flow diagrams, validating data flow diagrams. Creating ERDs: 1st, 2nd and 3rd normal forms
Week 6	User interface design	Principles of user interface design User interface design process Navigation design Input design Output design
Week 7	**CAT 1**	
Week 8	System Design	Design Strategies, Developing the Design Plan, and transition from Logical to Physical Models. **Program design :** structured charts:- syntax of structured charts, building structured charts Program specifications:- program information, events, inputs/outputs, pseudo codes,
Week 9	Implementation And Maintenance Phase	Installation and Testing, developing documentation, file conversion, system changeover strategy i.e. conversion strategy, preparation of business contingency plan, staff

	Transition to new system	training, and post implementation activities: - Transition in to the new system. Selecting the conversion strategy and the changeover strategy
WK10	**CAT 2**	
Week 11 - 13	Project Presentation	
Exams		

Course Assessment

Continuous Assessment Tests 30%
End of Semester Examination 70%

Course Textbooks

1. Jeffrey A. Hoffer, Joey George, Joseph Valacich (2007). Modern Systems Analysis and Design (5th ed.). Prentice Hall. ISBN: 0132240769
2. Mark Lejk, David Deeks (2002). An Introduction to Systems Analysis Techniques 2nd Edition, ISBN: 0201797135
3. Jeffrey Whitten (2005). System Analysis and Design Methods. McGraw Hill 7th Edition, ISBN-13: 978-0073052335
4. Satzinger, J. W., Jackson, R. B. & Burd, S. D (2010). Systems Analysis and Design in a changing World. Course Technology, Cengage Learning, 25 Thomson Place Boston, MA 02210 USA
5. Dennis, A., Wixom, B. H. & Roth, R. M. (2012). System Analysis and Design (5th Ed.). John Wiley & Sons, Inc. U.S.A.

Reference Textbooks

1. Shelly, Rosenblatt (2003). Systems Analysis and Design, 9th Edition, ISBN-13: 978-1133274056
2. Alan Dennis, Barbara Haley Wixom, Roberta M. Roth (2006). Systems Analysis and Design 3rd Edition. John Wiley & Sons, Inc. ISBN: 047172257
3. Kenneth E. Kendall, Julie E Kendall (2007). Systems Analysis and Design 7th Edition, Prentice Hall. ISBN: 0132240858
4. Wasson, C. S., (2006). System Analysis, Design and Development – Concepts, Principles and Practices. A John Wiley & Sons, Inc., Hoboken, New Jersey

Course Journals

1. ActaInformatica ISSN 0001-5903
2. Advances in Computational Mathematics ISSN 1019-7168
3. Advances in data Analysis and Classification ISSN1 1862-5347
4. Annals Of software Engineering ISSN 1022-7091

Reference Journals

1. Journal of computer science and Technology ISSN 1000-9000
2. Journal of Science and Technology ISSN 1860-4749
3. Central European Journal Of Computer Science ISSN 1896-1533
4. Cluster computing ISSN 1386-7857

Approved by: _____ Signature: _____ Date: _____