**SCHOOL:** PURE AND APPLIED SCIENCES

**DEPARTMENT: PURE AND APPLIED SCIENCES**

**PROGRAMME:** BSC.SOFTWARE ENGINEERING

**YEAR: 1**  **SEMESTER: 1**

**UNIT CODE SPE 2101** **UNIT TITLE:** SYSTEM ANALYSIS AND DESIGN

**LETURE HOURS:** 45 **PRE-REQUISITES:** NONE

**LECTURER’S NAME:** DR. CATHERINE MUKUNGA

**LECTURER’S CONTACTS;** **TEL:** 0720269144 **EMAIL:** [cmukunga@kyu.ac.ke](mailto:cmukunga@kyu.ac.ke)

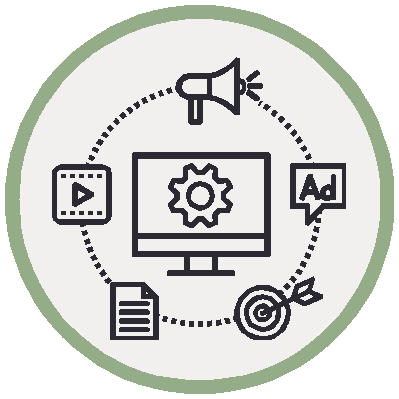
**Welcome Message**

Welcome to the course **SPE 2101** System Analysis and Design. The Purpose of the course is to introduce the concepts of systems analysis and design, models, methods and techniques.



**Learning Outcomes**

1. Explain the concepts of the structured analysis and design paradigm
2. Describe a typical systems development lifecycle (SDLC).
3. Describe other systems development methodologies



**Course Evaluation**

* CAT 1 = 15 %
* CAT 2 = 15 %
* Assignments = 10 %
* Examination = 70%
* Pass mark = 40 %

**Instructional Materials**

* White board
* LCD Projector
* Smarboards
* Masomo Portal

**Teaching Methodology**

* Blended learning - combines both online and physical classroom learning
* Case analysis
* Group discussions

**COURSE OUTLINE**

|  |  |  |  |
| --- | --- | --- | --- |
| S/N. | Week | Sub-Topic | Remarks |
|  | Week 1 | **Concepts of System Analysis and Design**   * Introduction * Elements of a system * Key activities in system analysis and design * Types of systems |  |
|  | Week 2 | **System development life cycle**   * Phases of the system life cycle * System analyst attributes and skills |  |
|  | Week 3 | **Requirements Determination**   * Importance of requirements determination * Methodologies for requirements determination * Challenges in requirements determination |  |
|  | Week 4 | **Feasibility studies**   * Steps Involved in Feasibility Analysis * Types of feasibilities * Feasibility Study Report |  |
|  | Week 5 | **CAT ONE** |  |
|  | Week 6 | **Requirements Modelling**   * Introduction * Requirements modelling techniques * structured textual models   + - use case descriptions     - user stories * graphical models * use case diagrams * data flow diagrams * Entity relationship diagrams |  |
|  | Week 7 | * activity diagrams * state transition diagrams * sequence diagrams * Tools for requirements modelling |  |
|  | Week 8 | **Systems analysis tools and techniques**   * Structures Analysis Tools * Data flow diagrams * Pseudocodes * Data dictionary * structured English |  |
|  | Week 9 | * Decision Trees * Decision Tables * Guidelines for selecting appropriate tools |  |
|  | Week 10 | **CAT TWO** |  |
|  | Week 11 | **System Design**   * Conceptual Design * Logical design * Physical design |  |
|  | Week 12 | **Design strategies**   * Bottom up * Top down * Structured design * Object oriented design * Joint application design * Prototyping |  |
|  | Week 13 | **REVISION FOR EXAMS** |  |
|  | Week 14 | **END OF SEMESTER EXAMINATIONS** |  |

**COURSE TEXTBOOKS**

1. Vladimir Foundation of information systems Mcgrawhill
2. Flynn Understanding operating systems Brookcole
3. Tanenbaum Modern operating systems 0-13-092641-8 Prenticehall
4. Mario Logic & Computer design fundamentals 0-13-191165-1 Prenticehall

**REFERENCE TEXTBOOKS**

1. Alan Dennis, Barbara Haley Wixom, Roberta M. Roth (2006). Systems Analysis and Design (3rd ed.). John Wiley & Sons, Inc. ISBN: 047172257X
2. Kenneth E. Kendall, Julie E Kendall (2007). Systems Analysis and Design (7th ed.). Prentice Hall. ISBN: 0132240858
3. Shelly, Rosenblatt (2003). Systems Analysis and Design, 9th Edition, ISBN-13: 978- 1133274056

**COURSE JOURNALS**

1. Oxford Journals: The Computer Journal Online ISSN 1460-2067, Print ISSN 0010-4620
2. Journals of Computer Science ISSN 1000-9000
3. Central European Journal of Computer Science ISSN 1896-1533

**REFERENCE JOURNALS**

1. Directory of Open Access (DOAJ): Computer Science ISSN 2246-9958
2. Journal of Science and Technology ISSN 1860-4749
3. Central European Journal of Computer Science ISSN 1896-1533