| Course Code/Title | ECSII 2105 SYSTEM ANALYSIS | |
|---|---|---|
| Lecturer | Sarah Osida:0712299119, osidahs@tukenya.ac.ke | |
| Day/Time of week | Monday, Wednesday and Friday | TERM 3 2022/2023 |
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## 1. Course objectives

System Analysis **& Design -** is a step-by-step process for developing high-quality information systems This course will allow students to acquire knowledge and training to enable them apply in the project management process.

## 2. Course Content
### ECSII 2105: System Analysis

Introduction to System Analysis; Definition, Importance of System analysis, system analyst, Practice and theory interaction; Systems: introduction to systems, information systems, System theory; System Development Life Cycle: overview of life cycle phases, alternative Approaches to life cycle; problem definition; feasibility study: types, study, report; system investigation: introduction, terms of reference, fact finding, fact recording; system analysis: introduction, methodologies, tool and techniques: Data flow modeling, Logical data analysis, entity-event modeling, Data dictionary, Relational data analysis, software development models, requirements specifications, hard systems thinking, soft systems thinking, practical systems thinking, cost benefit analysis; case study and research: students identify areas of computer applications for research and carry out system analysis on a system;

## 3. Detailed Course Outline

| Week | Subject area | Discussion topics | Remarks |
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| 1 | Introduction to Systems Analysis | • Definition<br>• Systems analyst in information systems development projects, definition, functions and roles<br>• The fundamental four-stage systems development life cycle (planning, analysis, design, and implementation) is established as the basic framework for the IS development process<br>• Importance of System analysis<br>• System components<br>• System Development methods | |

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| | | • System Development Life Cycle | |
| 2 | Systems Development Methodology Options | • Waterfall Development<br>• Parallel Development<br>• V-model (variation of the Waterfall Development)<br>• Rapid Application Development (RAD)<br>  - Iterative Development<br>  - System prototyping<br>• Agile Development<br>• **CAT /Assignment** | |
| 3 | Requirements Determination | • Requirement determination.<br>• Requirement elicitation techniques.<br>• Requirement analysis strategies | |
| 4 | REQUIREMENTS MODELING | • Output Examples<br>• Input Examples<br>• Process Examples<br>• Performance Examples<br>• Control Examples<br>• **CAT/ Assignment** | |
| 5 | Use Case Analysis | • Elements of a use case.<br>• Alternative use case formats.<br>• Use cases and functional requirements.<br>• Use cases and testing.<br>• Building use cases<br>• **Practical Assignment** | |
| 6 | Process Modeling | • Data flow diagrams.<br>•  - Reading data flow diagrams<br>•  - Elements of data flow diagrams<br>•  - Using data flow diagrams to define business processes<br>• Process descriptions<br>   o Creating data flow diagrams | |
| 7 | Data Modeling | • The Entity Relationship Diagram (ERD).<br>  - Elements of ERD<br>  - The Data Dictionary and Metadata<br>• Creating an Entity Relationship Diagram.<br>• Validating an ERD. | |
| 8 | | • Exams | |

4. **Teaching methodology**

   Lectures, Practical Class Exercises, Group Discussions and Presentations

5. **Course evaluation**

   Course Work: Continuous Assessment tests, assignments and practical =30%,
   Final Examination =70%