**FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGIES**

**SUMMER 2024**

**FINAL EXAMINATION**

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| **COURSE TITLE:** | Introduction to Software Engineering |
| **COURSE CODE:** | ICT 2140 |
| **INSTRUCTOR:** | TEKOH PALMA ACHU |
| **DATE:** | 1ST WEEK AFTER SUMMER EXAMS |
| **DURATION:** | 6 Weeks |

# Project specification:

Project Presentation Period: 1 Week after Summer Exams

## Description:

This document is meant to guide students of **Introduction to software engineering** towards the realization of their projects which will count as their final Exams with a weight of 70%.

At the end of this Project, students are expected to come up with:

- A comprehensive Report of their project Hard and soft copies (word or pdf) (25%)
- A full functional Application (Desktop, Mobile or Web) (60%)
- A power point presentation (Not more than 20pages) of their project (15%)

**NB:** The final presentation date of Projects will be announced by the lecturer (1 Week after Summer Exams)

## Phase 1: Team Organization and workflow management (1/6week)

During this phase of the project students are expected to:

- Organize themselves to highly cross-functional **teams** of eight (8) team members
- Each team is expected to have a GitHub repository for their project with each member actively contributing to it.
  **NB:** Grading will be based on each members commit history

## Phase 2: Project Selection and Requirements Elicitation and Analysis Phase (2/6week)

During this phase students are expected to:

- Define clearly the Requirements of their system
- Analyse the feasibility of the various requirements
- Come up with a requirements specification for their system

## Phase 3: Design Phase - Object Oriented Design (UML) (3/6 Week)

Task: Design and Documentation of UML Diagrams to meet your system specifications.

Each group is expected to come up with the following UML diagrams

- Comprehensive use case diagram of their system
- Class diagram
- At least 5 sequence diagrams depicting different aspects of their system

## Phase 4: Implementation/ Coding (4 and 5 Weeks)

- Using any technology stack of your choice, **Build, Build and Build More!**
- No WordPress application will be accepted
- Every system build should be for the greater good of the society. I.e. No illegal platform is acceptable e.g. gambling, drug trafficking platform is acceptable

## Phase 5: Testing, Deployment and Presentation (6/6 Week)

During this closing phase of your project each group is expected to use any testing framework based on the technology stack used in implementation their projects to test their applications functionalities each group is expected to do either white box or

black box testing or both e.g. unittest for python projects, Jest for JavaScript project etc

As for deployment

- For desktop applications, Package and make their desktop available for distribution eg .exe file
- As for web applications, deploy them to be readily available online
- Mobile Applications should be deployed to their appropriate market Place (Google Play store, Appstore, Windows store etc)
- (NB: applications not deployed will be graded on 75% of the overall score)

**PROJECT REPORT TEMPLATE**

***Course Code/Course Title*** _____

***Group Number*** _____

***Project Topic*** _____

*Link to GitHub Repository* _____

***Group Leader*** _____

## *Group Information*

| *SN* | *Member's Name* | *Registration Number* | *Team Role* |
|---|---|---|---|
| *1* | | | |
| *2* | | | |
| *3* | | | |
| *4* | | | |
| *5* | | | |
| *6* | | | |

***Note:***

- *The following format at minimum must be used for the Project Presentation (This is just a guide but you are not limited to it, you are allowed to expand it further)*

***CHAPTER ONE: INTRODUCTION***

- *General Introduction*
- *Aim and Objectives*
- *Problem Statement*

***CHAPTER TWO: LITERATURE REVIEW***

- *Review of concepts related to your Project e.g. database, API etc*
- *Software Development Methodologies*
- *Review of various Software development methodology*

- *Choose a methodology and give reasons for choice of methodology.*
- *Review of related literature with respect to your chosen project*

***CHAPTER THREE: METHODOLOGY AND MATERIALS***

- *Research Methodology*
- *System Requirements (Functional and Non-Functional)*
- *System Design*
    - *Architecture of your system (HLD)*
    - *UML Diagrams (use case, class and at least 5 sequence diagrams)*
- *Application of chosen methodology*
    - *Team organization*
    - *Workflow management*
    - *Conflict Resolution*
    - *Challenges encounter and how you overcame them*
- *Requirements specification (Product backlog and Sprint backlog)*
- *A Test Case document*
- *Proposed Algorithms (core algorithm of your application)*
- *Materials and technologies used (briefly list the name of the technology or material and its role in realizing your system)*

***CHAPTER FOU: RESULTS AND DISCUSSIONS***

- Screenshots of various application scenarios
- Screenshots of various API Request/Response
- Etc..

***CHAPTER FIVE: RECOMMENDATIONS AND CONCLUSION***

In not more than 3 paragraphs summarize what your team has been able to achieve, the difficulties you encountered and recommendation for further studies

Best of Luck! – Tekoh Palma