**SCHOOL OF ENGINEERING AND TECHNOLOGY**

**DEPARTMENT OF COMPUTING AND IT**

**SCO 305: SOFTWARE PROJECT MANAGEMENT**

**GROUP 3 WORK PROJECT PLAN**

**PROJECT TITLE: TTS-MKSU**

**PROJECT DESCRIPTION:** TTS-MKSU is a project towards developing a system of automatic timetabling. The project's primary focus is to allocate lecturers and their respective units time and lecture halls in an automated manner.

**PROJECT STAKEHOLDERS**

* Project manager: Cynthia Kikechi
* Machakos University
* Project team: Developers; James Mugambi

Kalume Wanje

Cynthia Kikechi

Sila Mulingi

Teresa Maingi

**PROJECT PHASES**

1. Planning and requirements gathering
2. Systems design
3. Frontend Development
4. Backend development
5. API development
6. Database design and integration
7. Algorithm development
8. Testing and Quality assurance
9. Deployment and hosting
10. Documentation and user support

**PROJECT TIMELINE**

1. **Planning and requirements gathering (1 week)**

* **Tasks**

Identify project objectives

Gather requirements from the stakeholders

Create a project plan

Identify key features and constraints of the project.

1. **System design (2 weeks)**

* **Tasks**

Define the database schema

Design the application’s architecture

Plan the frontend and backend technology stack

Create wireframes for the User Interface

Design the API endpoints and data structures

1. **Frontend development (1 week)**

* **Tasks**

Implement UI using HTML, CSS and JavaScript

Develop user registration and authentication

Implement real-time updates of the system

1. **Backend development (4 weeks)**

* **Tasks**

Set up the backend server using our framework

Integrate user authorization and authentication

Integrate with database for data storage

Implement route handling

Ensure proper error handling and security measures

1. **API development (4 weeks)**

* **Tasks**

Develop API route handlers

Implement data validation

Integrate authentication and authorization

Test the API endpoints thoroughly

1. **Database design and integration (2 weeks)**

* **Tasks**

Design database schema to store data

Set up MYSQL

Develop database models and relationships

Implement data seeding and migration scripts

Test database integration

1. **Algorithm development (5 weeks)**

* **Tasks**

Develop and implement scheduling algorithms

Create data structures for classes, resources and constraints

Define an objective function for schedule optimization

Integrate the algorithm with the API

1. **Testing and Quality assurance (2 weeks)**

* **Tasks**

Perform unit and integration testing of components

Validate the algorithm’s performance

Conduct user-acceptance testing

Identify and fix bugs

Optimize performance and security

1. **Deployment and hosting (3 days)**

* **Tasks**

Deploy the application to GitHub

Configure server settings, security and domain setup

Set up monitoring mechanisms

Perform testing on the production environment

1. **Documentation and user support (continuous)**

* **Tasks**

Create user and API documentation

Provide user support

Gather user feedback and make necessary updates

Continuously improve the application based on user input.