INTERNATIONAL UNIVERSITY OF EAST AFRICA

'Learning to Succeed'

FACULTY OF SCIENCE AND TECHNOLOGY

END OF SEMESTER EXAMINATIONS - DECEMBER 2025

PROGRAMME: BSSE

YEAR/SEM: YEAR 3/SEMESTER 2

COURSE CODE: GMT2101

NAME: PROJECT PLANNING AND MANAGEMENT-FST

DATE:

TIME:

INSTRUCTIONS TO CANDIDATES:

SECTION A

Section A carries 40 marks and is compulsory. Draw clear well diagrams where needed

Question 1:

CASE STUDY 1: Digital Health Records System Implementation

Background

The Ministry of Health in Uganda has approved funding for the implementation of a comprehensive Electronic Health Records (EHR) system across 15 district hospitals in the Central Region. The project, budgeted at USD 2.5 million, aims to digitize patient records, improve data accessibility and enhance healthcare service delivery over an 18-month period.

Currently, these hospitals rely on paper-based record systems, leading to frequent loss of patient files, delayed diagnosis, long patient waiting times and difficulties in generating health statistics for disease surveillance. The project will integrate patient registration, clinical documentation, laboratory results, pharmacy management and billing systems.

The project team includes a Project Manager, three software developers, two database administrators, a network engineer, an M&E officer and training coordinators. The implementation will be phased, starting with three pilot hospitals before scaling to all 15 facilities.

Questions:

1. Using the Logical Framework Approach (LFA):
    a. a) Formulate one general objective for this project (2 marks)
    b. b) Develop three SMART specific objectives (6 marks)
    c. Identify two key assumptions that could affect project success (2 marks)
2. Conduct a SWOT analysis for this EHR implementation project. Identify at least two factors under each category (8 marks)
3. Develop a Cost Breakdown Structure (CBS) for this project. Your CBS should include at least FIVE (5) major cost categories with brief justification for each category. (10 marks).
4. Design a Monitoring and Evaluation (M&E) Matrix for this project. Clearly identify and include at least two process indicators, two outcome indicators and one impact indicator. For each indicator, specify the data source and frequency of data collection. (6 marks)
5. Identify and analyze three major risks associated with this project. For each risk, State the risk, assess its probability and impact, propose an appropriate mitigation strategy (6 marks)

Question 2:

CASE STUDY 2: University Smart Library Management System

International University of East African (IUEA) has decided to implement a Smart Library Management System to modernize its library services across three campuses. The current manual system faces challenges including: difficulty tracking book borrowing and returns, frequent loss of books, no real-time inventory updates, long queues during peak periods, and inability to access the library catalog remotely.

The proposed Smart Library System will include features such as: online catalog search, automated check-in/check-out using RFID technology, digital resource management, automated fine calculation, mobile app for students, real-time availability tracking, and integration with the existing student management system.

The project has a budget of USD 450,000 and is expected to be completed in 12 months. The project will be implemented by an outsourced software development company, with internal IT staff responsible for infrastructure setup and ongoing maintenance. The system will serve approximately 8,000 students and 200 academic staff.

After project completion, the university will be responsible for system maintenance, user support and future upgrades.

Questions:

1. Write a compelling Executive Summary (150-200 words) for this project proposal that could be presented to the University Council for funding approval. Your summary should include the problem, proposed solution, expected benefits, and budget. (12 marks)
2. Identify TWO (2) direct beneficiaries and TWO (2) indirect beneficiaries of this project.(2marks)
3. List FOUR (4) key benefits of outsourcing the software development component of this project. (4 marks)
4. List THREE (3) potential risks associated with outsourcing this project and propose specific mitigation strategies for each risk. (3marks)
5. Create a Gantt Chart representation for this project showing at least SIX (6) major activities/phases with their durations and dependencies over the 12-month timeline. (13 marks)
6. Considering the project handover and sustainability phase:
    a. a) Identify THREE (3) critical components that must be included in the handover checklist to ensure successful transfer of the system to the university. (3 marks)
    b. b) Explain THREE (3) sustainability factors that will ensure the long-term success of this system after the external vendor exits. (3 marks)

SECTION B

Attempt any 3 questions. Each question carries a total of 20 marks. Draw clear well diagrams where needed

Question 1:

a. Explain the purpose and key components of a Logical Framework Approach (LFA) in project design. (6 Marks)

b. Describe the four main risk response strategies a project manager can employ. (6 Marks)

c. You are managing the development of a new mobile banking application. Create a simple SWOT analysis for this project, identifying two points for each category (8 Marks)

Question 2:

a. Compare and contrast External Monitoring & Evaluation with Participatory Monitoring & Evaluation. List two advantages and two disadvantages of each approach. (10 Marks)

b. List five key components that should be included in a comprehensive Project Proposal. (5 Marks)

c. What is the significance of a Post-Implementation Review (PIR) for an ICT project? (5 Marks)

Question 3:

a. Define the following project management tools: Work Breakdown Structure (WBS), Gantt Chart, Critical Path Method (CPM) (6 Marks)

b. Explain the concept of "project sustainability." List three technical factors and three financial factors that influence the long-term sustainability of an ICT project. (8 Marks)
c) What is the role of a Cost Breakdown Structure (CBS) in project budgeting? List four main cost categories typically found in a CBS. (6 Marks)

Question 4:

a. Describe the five phases of the traditional project management life cycle. (10 Marks)

b. Explain the importance of a Project Justification section in a proposal. What are three key elements it should contain? (4 Marks)

c. You are implementing a new Student Information System at a university. Identify four potential stakeholders for this project and, for each, specify one type of information they would need and a suitable method for communicating it. (6 Marks)

Question 5:

You are the project manager for a university's Online Student and Hostel Management System. Create a brief communication matrix and progress report for this project. (12 marks)

b. You are the project manager for a company planning to develop a custom Customer Relationship Management (CRM) software. The management is deciding between using an Agile or a Traditional (Waterfall) methodology.
i. Recommend one methodology, justifying your choice with three reasons.
ii. Identify two potential pitfalls of your chosen methodology and suggest how you would mitigate them.
(8 Marks)

Question 6:

a. Define outsourcing in the context of IT project management. (4 Marks)
b. Differentiate between Monitoring and Evaluation as key terms used in project planning and management (2 Marks)
c. What is Knowledge Transfer? (1 mark)
d. What are Knowledge Transfer Strategies? (1 mark)
e. List any 5 knowledge transfer strategies you can adopt for a project's sustainability (5 marks)
f. ICT projects often involve many stakeholders with conflicting interests. Using the case study provide in section A, perform a stakeholder analysis. Identify key stakeholders, their roles, influence/interest levels and a communication strategy for each.(7 Marks)

Question 7:

a. Define the term "project environment" and differentiate between its internal and external factors. Provide two examples of each. (6 Marks)
b. Explain the concept of a project as a conversion process.(8 Marks)
c. Why is it important for a project manager to understand the project environment? List three reasons.(6 Marks)

Question 8:

a. What is the primary purpose of an Executive Summary in a project proposal? List three key elements it must contain. (6 Marks)
b. Describe the RACI framework. What do the acronyms R, A, C, and I stand for, and why is this framework important in project implementation? (8 Marks)
c. Identify three common challenges faced during project implementation and suggest a practical solution for each. (6 Marks)

Question 9:

Differentiate between Direct Beneficiaries and Indirect Beneficiaries of a project. Provide an example of each in the context of rolling out an Inventory Management System(6 Marks).

b. Explain the difference between a project's General Objective and its Specific Objectives. Write one General Objective and two corresponding Specific Objectives for a project aimed at "Improving Digital Literacy in a Rural Community." (8 Marks)

c. What is the role of the Methodology and Implementation Plan in a project proposal? Give two examples of each (3 Marks)

d. Define what a scope is Project planning and management (1 mark)

e. What is scope creep? (1 mark)

f. How do you as a project manager manage scope creep? (1 mark)

Question 10:

a. List the four core values of the Agile Manifesto. (4 Marks)

b. List and briefly explain 4 principles of Agile (8 Marks)

c. List 3 benefits of adopting the Agile methodology in managing ICT Projects (3 marks)

d. Give 3 major pitfall of the Agile methodology, and how can a project team mitigate it?(5 Marks)

Question 11:

a. Define the term "Impact Assessment" in the context of project evaluation. How does it differ from monitoring routine project outputs? (6 Marks)

b. Create a simple M&E matrix for a project that aims to "Deploy an Online Attendance System in a University." Include at least three objectives with corresponding indicators, data sources, and frequency of monitoring. (8 Marks)

c. Briefly explain the following types of Impact Assessment:
i. Social Impact Assessment (SIA)
ii. Economic Impact Assessment
(6 Marks)

Question 12:

a. What is a Feasibility Study? List and briefly explain three types of feasibility that should be analyzed before project initiation. (4 Marks)

b. What is the primary purpose of a Feasibility Study in the project lifecycle? (2 Marks)

c. What is the key difference between a Feasibility Study and a Project Proposal? (4 Marks)

d. Briefly explain what SMART stands for in the context of project objectives. (4 Marks)

e. Using the case study in section A, briefly describe what would be assessed under: i. Technical Feasibility, ii. Operational Feasibility (6 Marks)