United International University (UIU)

Dept. of Computer Science & Engineering (CSE)

Exam Name: Mid Term Exam   Trimester: Fall 2024
Course Code: PMG 4101, Course Title: Project Management
Total Marks: **30**   Duration: 1 hour 30 minutes

Any examinee found adopting unfair means will be expelled from the trimester / program as per UIU disciplinary rules.

Answer all the questions.

Consider the following Scenario:

Your team has been assigned to develop a e-learning web platform aimed at delivering personalized, AI-driven learning experiences for students ranging from high school to university level. The platform is designed to offer interactive content, adaptive quizzes, real-time feedback, personalized learning paths, collaborative learning tools, gamified elements like progress tracking and achievement badges, and advanced analytics, all utilizing machine learning algorithms to tailor educational content to each student's individual learning pace and style. The client, a large educational organization, wants to increase student engagement and improve learning outcomes by integrating gamification, social learning tools, and real-time collaboration features. Initially, the client wanted to receive the entire product at once after one year. However, after some times the client has requested that the platform be ready for a pilot program within four months. Upon realizing that delivering the full platform within four months would be challenging, the decision was made to break the project into sub-modules, delivering each module in separate releases, starting with the highest priority requirements. Given the timeline, there are concerns about balancing the quality of the initial features while ensuring the platform is scalable and can handle high traffic during peak usage periods. Your team consists of software developers, but they lack expertise in AI/ML, UX design, and gamification. To address this gap, you will need to hire data scientists, AI/ML specialists, and instructional designers who will collaborate with the tech team to ensure the platform delivers personalized and engaging experiences. The project will be executed in close collaboration with subject matter experts (SMEs), including teachers and students, to obtain continuous feedback on the platform's functionality. There will be multiple testing phases, and each subsequent release of the system will build upon the previous one, gradually adding new functionality until all planned features are implemented. As the project manager, you will need to manage stakeholder expectations and prioritize features that offer the most value to students and educators. According to this scenario, answer the following questions.

1. Choose a software engineering methodology for developing the above-mention project and discuss the rationale for choosing the methodology. Discuss the drawbacks of SCRUM methodology.

    [**CO1**]   **5**

2. Write down the Vision and Scope Document for the project described above following proper outline.   [**CO2**]   **5**

3. As a project manager if you want to generate a proper Work Breakdown Structure (WBS), state the rules that you would suggest to your team. Develop the WBS for the scenario described above and estimate (duration unit of day) for major **two WBS pieces**/components for the above scenario following the principles and rules.   [**CO3**]   **5**

4. Write down activities of the moderator during the 'Kick off Meeting' for Delphi Wideband Estimation (DWE) technique. Suppose you want to form an estimation team consists of three members. Show the steps of estimation session (one estimation form and tentative convergence chart of duration) for the above-described project, according to DWE method.

    [CO3]   **5**

5. Now as a project manager you are preparing for risk mitigation. Develop a Risk Plan sheet showing at least three major risks for the above scenario.

    [CO2]   **5**

6. Progress report submission and presentation on Work Breakdown Structure and Delphi Wideband Estimation Technique for a group project has been evaluated earlier (**Do not answer this question**, **already completed in classroom**).

    [CO3]   **5**