Learning Guide Unit 6

Reading Assignment

As you go through the readings and watch the videos, consider the following:

1. How do software maintenance strategies and best practices address evolving requirements while ensuring system reliability?
2. What role do configuration management and change control play in maintaining system integrity during updates?

Read:

1. Rashid, C. H., Shafi, I., Ahmad, J., Thompson, E. B., Vergara, M. M., De la Torre Díez, I., & Ashraf, I. (2023). Software cost and effort estimation: Current approaches and future trends. *IEEE Access, 11,* 1-22. Licensed under CC 4.0.
https://www.researchgate.net/publication/373748570_Software_Cost_and_Effort_Estimation_Current_Approaches_and_Future_Trends

- This article reviews trends in software cost and effort estimation research, highlighting the comparative effectiveness of ML and non-ML techniques. It proposes a systematic three-stage approach and identifies ANN and COCOMO as preferred methods, with MMRE as the leading accuracy metric.

Additional Watch:

1. David Albrice. (2020, August 24). *3 maintenance strategies: Which works best?* [Video]. YouTube.

- This video explores three key maintenance strategies—preventive, predictive, and corrective—highlighting their features, benefits, and limitations. It provides insights into selecting the most effective approach based on operational needs and resource constraints.

3 Maintenance Strategies: Which Works Best?

2. TutorialsPoint. (2018, May 9). *Software metrics and measures* [Video]. YouTube.

- This video explores the importance of quantifying software quality and performance through metrics. It covers key concepts such as process, product, and project metrics, emphasizing their role in evaluating efficiency, identifying issues, and improving overall software development practices.

Software Metrics and Measures

3. Project Management World. (2023, September 4). *Cost estimation techniques | Analogous, parametric, bottom up & three point estimation (PERT)* [Video]. YouTube.

- This video explores key cost estimation techniques, including Analogous, Parametric, Bottom-Up, and Three-Point (PERT) estimation. It explains how each method works, highlights their advantages, and provides practical examples to demonstrate their application in project management for accurate budgeting and planning.

Cost Estimation Techniques | Analogous, Parametric, Botto...

4. Mister Simplify. (2020, December 5). *Business process re-engineering explained - Simplest explanation ever* [Video]. YouTube.

- The video provides a concise and clear overview of how organizations can fundamentally rethink and redesign their processes to achieve dramatic improvements in efficiency, quality, and customer satisfaction.

Business Process Re-engineering explained - Simplest Expl...

5. Helena Liu. (2020, May 25). *Configuration management vs change management PMP (example provided)* [Video]. YouTube.

- This video explores the key differences between these two critical project management processes. It explains how configuration management focuses on maintaining the consistency and integrity of a project's deliverables, while change management addresses the systematic handling of changes to project scope, processes, or objectives.

Configuration Management vs Change Management PMP (...