**NARAYANA ENGINEERING COLLEGE::NELLORE || GUDUR**

***Department of CSE***

**Lecture Plan**

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| **Course Details** |
| **Class: B. Tech Year-Semester:** II-II **Year:** 2024-25  **Course Title:** SOFTWARE ENGINEERING **Course Code: 23A05403 Credits:** 3  **Program/Dept.:** Computer Science and Engineering **Section:** CSE-A B & C **Batch:** 2023-27  **Regulation:** NECR-23 **Faculty:** Dr. Penchalaiah / Dr . V Sucharitha |

**Short Answer Question Bank**

**Module 3**

1. **What are the key characteristics of a good software design?**
   * + Correct: It should meet the specified requirements.
     + Efficient: It should use resources effectively.
     + Maintainable: It should be easy to understand, modify, and test.
     + Reliable: It should function correctly under different conditions.
     + Usable: It should be easy to use and learn.
2. **What is meany by cohesion**

* **Cohesion:** The degree to which elements within a module are related to each other and perform a single task. High cohesion is desirable.

**3.what is meant by coupling**

The degree of interdependence between modules. Low coupling is preferred as it makes modules more independent and easier to maintain.

**4.what are the core principles of Agile development?**

* + - Individuals and interactions over processes and tools
    - Working software over comprehensive documentation
    - Customer collaboration over contract negotiation
    - Responding to change over following a plan 1

**5.Write two differences between Extreme Programming (XP) differ from other Agile methodologies?**

XP emphasizes:

* + - Pair programming
    - Test-driven development
    - Continuous integration
    - Frequent releases
    - Customer involvement

**6.What is the purpose of a Data Flow Diagram (DFD)?**

A DFD is a graphical representation of the flow of data through a system. It shows how data enters the system, how it is processed, and how it exits the system.

**7.What are the characteristics of a good user interface?**

A good user interface should be:

* + - Easy to learn
    - Efficient to use
    - Pleasant to use
    - Consistent
    - Forgiving

**8.What do you mean by component-based GUI development.**

Component-based GUI development involves building user interfaces using pre-built components, such as buttons, text boxes, and menus. This approach can speed up development time and improve code reusability.

**9.What are the key steps involved in the user interface design process?**

* + - User analysis
    - Task analysis
    - Interface design
    - Prototyping
    - User testing

**10. What is structured design**

Structured design is a systematic methodology for creating software systems that emphasizes a clear and organized approach to decomposition and modularization.

Key Features of Structured Design:

1. Top-Down Approach
2. Modularity
3. Cohesion and Coupling
4. Data Flow Representation
5. Structure Charts
6. Design Principles

**Module 4**

1. **Define software reliability.**

Software reliability is the probability that a software system will operate correctly under specified conditions for a given period of time.

1. **What is statistical testing?**

Statistical testing is a technique used to assess the reliability of software systems. It involves collecting data on software failures and using statistical methods to analyze the data and estimate the system's reliability.

1. **What is a software quality management system?**

A software quality management system (SQMS) is a framework of policies, processes, and procedures that ensure the quality of software products and services. It helps to improve software quality, reduce defects, and increase customer satisfaction.

1. **What is the ISO 9000 standard?**

ISO 9000 is a family of international standards that specify requirements for quality management systems. It provides guidelines for organizations to improve their overall quality performance.

1. **What is the SEI Capability Maturity Model (CMM)?**

The CMM is a framework for assessing the maturity of an organization's software development processes. It helps organizations to improve their processes and achieve higher levels of software quality.

1. **What are some other important quality standards?**

Some other important standards include:

* + - IEEE standards
    - CMMI (Capability Maturity Model Integration)
    - ISO/IEC 25010:2011 (Systems and software engineering—Systems and software quality models)

1. **What is Six Sigma?**

Six Sigma is a methodology for improving process quality by reducing defects and variability. It uses statistical methods to identify and eliminate root causes of defects.

1. **How can software reliability be improved?**

Software reliability can be improved through:

* + - Rigorous testing
    - Code reviews
    - Static code analysis
    - Regular software updates and patches
    - Effective error handling and recovery mechanisms

1. **What is the role of software quality assurance in the software development process?**

Software quality assurance involves a set of activities designed to ensure that software meets specified requirements and quality standards. It includes activities like reviews, inspections, and testing.

1. **How can software metrics be used to assess software quality?**

Software metrics can be used to measure various aspects of software quality, such as:

* + Code complexity
  + Defect density
  + Test coverage
  + Cyclomatic complexity