

## **1. Core Principles of Software Engineering**

Software engineering focuses on building reliable, maintainable, and scalable software. Its core principles include modularity, abstraction, reusability, efficiency, and maintainability, ensuring software is easy to develop, test, and evolve over time.

## **2. Process Frameworks like CMM**

The Capability Maturity Model (CMM) is a process framework used to assess and improve software development processes. It defines maturity levels that help organizations measure process capability, consistency, and continuous improvement.

## **3. Prescriptive Process Models**

Prescriptive process models, such as Waterfall, Incremental, and Spiral models, provide structured guidelines for software development. They differ in flexibility, risk handling, and iteration, with Waterfall being linear and Spiral focusing on risk-driven iterations.

## **4. Agile Methodologies**

Agile methodologies emphasize iterative development, customer collaboration, and adaptability to change. Frameworks like Scrum and Kanban promote frequent feedback, small deliverables, and continuous improvement to enhance software quality and team productivity.