**1 – Project management**Techniques: waterfall model, V model, spiral mode, agile, scrum  
What is management? (Points)  
Problems of software projects  
Steps of new project  
Content of the feasibility study  
Planning  
Aim at Objective or products  
Risk Categories – Project,Product,Business  
Activity network

**2 – Requirement Description and elicitation**What are requirements, who use them  
Requirements specifications – what not how…  
Use case vs task description  
Elicitation – how we get reqs  
Why it is hard  
Stakeholders  
Elicitation techniques

**3 - Requirements Validation**Reviews and inspection  
Unified modelling language  
Use cases and task descriptionProblem frames:  
 Context diagram  
 Domain interfaces  
 Problem diagram

**4 - Software Quality**What is software qualityGraph – Reqs, money, maintenanceTechniques of validationQuality management activities – assurance-standards - code and process standards ,planning – how we measure,control – testing reviews  
Proccess improvements: measure-analyse-change  
Tests

**5 - Software Architecture**Design – inputs,activities,outputs  
Atch design – non func, component design - func  
Architectural view model  
Architectural patterns  
Reuse  
 - Application framework  
 - Product lines  
 - Domain specific language

**6 – Validation and verification**Validation – needs of stakeholders  
-Simulation by mixing models with code  
-Combining simulations including physical simulations  
-Simulations exploring design space  
-Hardware and software in the loop simulations  
Verification – evaluates software  
Objectives of testing  
static software product metric - points  
Planning software tests – points  
Testing methods..

**7 – Reuse**Why to reuse  
Types of reuse – System, app, comp, obje  
Concept reuse, classes reuse  
Application framework – extendsoftware product lineCoreDifferencesDomain specific languages – ansible

**8 – Safety critical software**what is safety, critical system, Failsafe system  
Failure,Error,Fault  
Primary, secondary fault  
Types of failures  
Safety in system development – plan, standards  
Incident vs accident  
reliability  
Tables – hazard severity, hazard frequency, risk class

**9 – Change/Configuration management**Change management  
Version management  
System building  
Release management  
Configuration management planning  
Change management flow, version management example, version management ex and numbering  
What influences releases