Course: SE811 Software Maintenance

Final Examination 2022 Syllabus

Chapter	Covered Topics
Chapter 1: Basic Concepts and Preliminaries	Software Evolution Software Maintenance Classification of Software Maintenance (corrective, adaptive, perfective, and preventive)
Chapter 2: Taxonomy of Software Maintenance and Evolution	Evolution of Software Systems - SPE Taxonomy (S-type, P-type) - Laws of Software Evolution (Laws of Lehman)
Chapter 3: Evolution and Maintenance Models	IEEE/EIA 1219 Maintenance Process
Chapter 4: Reengineering	General Idea Reengineering Concepts The reengineering process A General Model for Software Reengineering - Types of Changes (Rethink, Respecify, Redesign, Re-code) - Software Reengineering Strategies (Rewrite, Rework, Replace) - Reengineering cost factors Code Reverse Engineering - Purpose and Objectives of Reverse Engineering - Levels of Reverse Engineering - Techniques Used for Reverse Engineering
Chapter 6: Impact Analysis	General Idea Impact Analysis Process - Identifying the SIS - Analysis of Traceability Graph - Identifying the Candidate Impact Set Dependency-Based Impact Analysis - Call Graph - Program Dependency Graph (Static Slice, Dynamic Slice)
Chapter 8: Program Comprehension	General Idea Basic Terms (Goal of Code Cognition, Knowledge, Mental Model, Understanding Code) Cognition Models for Program Understanding (Letovsky Model)
Others	Maintenance Measurement - Size (LOC), Cyclomatic Complexity, Halstead Metrics, Maintainability Index