

ECE543 Digital System Testing and Design for Testability

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Course Outline

Part I: Introduction

Testing, ATE, Cost and Test Quality (Chapter 1,2,3)

Fault modeling (Chapter 4 and Class Notes)

Part II: Test Methods

Logic and fault simulation (Chapter 5 and Papers)

Diagnosis (Class Notes)

Testability measures (Chapter 6)

Combinational circuit Automatic Test Pattern Generation (ATPG) (Chapter 7)

Sequential circuit ATPG (Chapter 8)

Memory test (Chapter 9))

Delay test (Chapter 12)

IDDQ test (Chapter 13)

Part III: Design for Test (DFT)

Scan design (Chapter 14 and Papers)

Built-In-Self-Test (BIST) (Chapter 15)

Boundary Scan Standard (Chapters 16)

System test and core-based design (Chapter 18)

Chapters refer to the text book : *Essentials of Electronic Testing*, Michael L. Bushnell and Vishwani D. Agrawal, Springer Publishers