Electronic Information System Design

2 units (selection)

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Target⟩ This class introduces the techniques and the recent topics related to the design and test of logic circuits.

Outline⟩ Performance analysis methods of digital circuits in information systems, high speed logic circuit design, low power circuit design and optimized logic circuit design for high performance information system, testing and testable design of digital and analog circuits for realizing high reliable information system.

Style⟩ Lecture in combination with Portfolio

Keyword⟩ *system design for integrated circuits, testing of integrated circuits, synthesis for testability*

Fundamental Lecture⟩ "**Advanced Theory of Electronic Circuits**"(1.0)

Relational Lecture⟩ "**Integrated Information System Design**"(0.5), "**Integrated System Design**"(0.2)

Requirement⟩ Familiarity with switching theory

Goal⟩
1. To understand system design techniques for integrated circuits
2. To understand test technologies for integrated circuits
3. To understand design for testability techniques for integrated circuits

Schedule⟩
1. compsitions of information systems
2. design process of logic circuits
3. logic synthesis for combinational circuits
4. design process of sequential circuits
5. principle of dynamic logic circuits
6. design of dynamic logic circuits
7. hardware description language
8. circuit design using HDL
9. test process of logic circuits
10. test technologies for combinational logic circuits
11. test technologies for sequential logic circuits
12. design for testability
13. test technologies using design for testability
14. techniques of design for testability
15. Built-in self test for logic circuits
16. Final examination

Evaluation Criteria⟩ Participation and presentation:30%; Final examination:70%

Textbook⟩ specified in the first class

Reference⟩ introduced in the class

Contents⟩ http://cms.db.tokushima-u.ac.jp/cgi-bin/toURL?EID=216785

Student⟩ Able to be taken by only specified class(es)

Contact⟩
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Note⟩ This subject will be given in English.