

Advanced Software Engineering

Special Subjects
Elective 2 credit

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1. Course Description

The contents of the lectures are summarized as follows: (1) software process models (waterfall model and agile model), (2) phases of software process model (requirement analysis, software design, programming, software test and software maintenance), (3) software development methods (structured analysis/design technique and object-oriented methodology), and (4) software verification/specification methods (formal method, model checking, etc.).

2. Course Objectives

The aim of this course is to understand the following items: (1) software process models, (2) software development methods, and (3) logic-based software verification/specification methods such as model checking.

3. Grading Policy

Students are evaluated by a term examination, some midterm examinations, and some quizzes.

4. Textbook and Reference

Textbook

No textbook.

Reference

Michael Huth and Mark Ryan Logic in Computer Science: Modelling and Reasoning about Systems
Cambridge University Press

5. Requirements (Assignments)

Students should read the slides of the lecture. The video contents of the lecture should be viewed.

The following site should be bookmarked:

Guide to the Software Engineering Body of Knowledge (SWEBOK Guide) , IEEE Computer Society,
<http://www.computer.org/web/swebok>

6. Note

LMS is used in this course.

7. Schedule

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| [1] | Introduction |
| [2] | Software process models |
| [3] | Requirement analysis |
| [4] | Software design |
| [5] | Programming |
| [6] | Software test |
| [7] | Software maintenance |
| [8] | Structured analysis/design technique |
| [9] | Object-oriented methodology (1): Concepts |
| [10] | Object-oriented methodology (2): Examples |
| [11] | Modeling technique (1): Concepts |
| [12] | Modeling technique (2): Examples |
| [13] | Formal methods and verification technique (1): Concepts |
| [14] | Formal methods and verification technique (2): Model checking |
| [15] | Software evaluation |