

Engineering of Knowledge Information Processing

Special Subjects
Elective 2 credit

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1. Course Description

In this course, students learn how to represent knowledge in computers and how to deal with the knowledge. For this purpose, students will read and write Java program codes which implement knowledge representation models and reasoning processes.

This course is related to diploma policy 1.

2. Course Objectives

This course aims to provide students with an in-depth understanding of knowledge representation models and reasoning methods in traditional knowledge engineering. The specific goals for students are the following:

- To be able to explain knowledge representation models and reasoning methods using the knowledge.
- To be able to write program codes to implement the knowledge representation models and the reasoning methods for practical information processing.

3. Grading Policy

The final grade of students will be calculated according to the following process: reports on learning activities 30%, reports on three assignments 50% and presentation as final examination 20%. Feedbacks on reports are given via LMS.

4. Textbook and Reference

Textbook

Torimatsu Shintani Introduction to Java programming for intelligent systems CORONA PUBLISHING

5. Requirements(Assignments)

In-class and out-of-class learning can not be distinguished because this subject is a correspondence course. Students are expected to learn according to the directions on LMS. Learning activities on each class will take about 4 hours and a half.

6. Note

The knowledge of Java programming is required.

7. Schedule

- [1] Introduction and Java development environment.
- [2] GUI programming and multi-thread.
- [3] Basics of search algorithms.
- [4] Programs using search algorithms.
- [5] Matching and unification.
- [6] Semantic networks.
- [7] Frames.
- [8] Rule-based reasoning(forward reasoning).
- [9] Rule-based reasoning(backward reasoning).
- [10] Planing.
- [11] Mobile agents.
- [12] Natural language processing.
- [13] Decision-making support system.
- [14] Mini research project(design of program).
- [15] Mini research project(programming).