

<<Last Updated:2020/04/06>>

Course Schedule Information

Course Code	331220
Semester	Spring and Summer Term
Day and Period	Mon6
Course Name (Japanese)	知能と学習
Room	Others
Course Name	Intelligence and Learning
Capacity	100
Course Numbering Code	33BIEN6F215,33INPS6F215,33COSC6F215,33INSE6F215,33INNE6F215,33MUEN6F215
Credits	2.0
Student Year	1,2
Instructor	Masayuki Numao

Detailed Syllabus Information

Course Name	
Language of the Course	Japanese/English
Type of Class	Lecture Subject
Course Objective	Artificial Intelligence (AI) pursues intelligent computers. Computers are now so intelligent that one has already defeated the World Champion in chess several times, communicates with its user in English or Japanese, discovers a new knowledge from a huge data file, and designs a picture and a music piece. This lecture lays the foundation of such technologies where adaptation and learning are crucial. Data Mining is also discussed from the view point of AI and Machine Learning.
Learning Goals	Students can discuss what the source of intelligence is. They can program some simple AI. They learn Machine Learning and Data Mining from the view point of AI, and can use their tools and write their simple programs.
Requirement / Prerequisite	
Class Plan	<ol style="list-style-type: none"> 1. What is Artificial Intelligence and Machine Learning? 2. Learning with Decision Trees 3. Rule-Based Systems and Rule Learning 4. Naïve Bayes and Nearest Neighbor 5. Association rules and their learning 6. Clustering 7. EM algorithm 8. Support Vector Machine 9. Predicate Logic 10. Inductive Logic Programming and Relational Mining 11. Version Spaces and Explanation-Based Learning 12. Preprocessing and Data transformation for Data Mining 13. Feature Selection 14. Feature Construction and Predicate Invention 15. Ensemble Learning
	Students will do some home works and write some papers.

Independent Study Outside of Class	
Textbooks	Slides are distributed.
Reference	Russell and Norvig: Artificial Intelligence - A Modern Approach Second Edition, Prentice Hall (2003).
Grading Policy	Final 50%. Papers 30%. The number of questions counted during each class period 20%.
Other Remarks	The slides and a video are uploaded on CLE. Blackboard collaborate session on CLE will be started from 18:00 every Monday from April 13.
Special Note	*** We will have no lecture in this room during April. *** Room: Lecture Hall, The Institute of Scientific and Industrial Research ⑤ in http://www.sanken.osaka-u.ac.jp/en/access/access_buildings/
Office Hour	Monday 15:00-17:00
Messages to Prospective Students	Think what is intelligence. Please ask a question during a class period in public.

Cautions for Students

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