

<<Last Updated:2022/03/02>>

Course Schedule Information

Course Code	88A519
Semester	Spring and Summer Term
Day and Period	Mon3 ✓
Course Name (Japanese)	国際交流特別講義 3 (知能と学習)
Room	
Course Name	International Exchange Special Lecture 3(Intelligence and Learning)
Capacity	0
Course Numbering Code	88INES9U105
Required/Optional	
Credits	2.0
Student Year	1,2,3,4,5,6
Field	
Instructor	Masayuki Numao
Course of Media Class	Not Applicable

※About Course of Media Class

"Course of Media Class" are classes in which more than half of the classes are held in places other than classrooms by making advanced use of various media.

Undergraduate students can include up to 60 credits in media class course as requirements for graduation.

Even if this is not the case, we may hold classes using the media.

Detailed Syllabus Information

Course Subtitle	Intelligence and Learning
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
Independent Study Outside of Class	Students will do some home works and write some papers.
Textbooks	Slides are distributed.
Reference	Russell and Norvig: Artificial Intelligence - A Modern Approach Fourth Edition, Prentice Hall (2020).
Grading Policy	Final 50%. Papers 30%. The number of questions counted during each class period 20%.
Attendance and Student Conduct Policy*	
Other Remarks	The slides are uploaded on CLE. Online lectures on CLE will start from 13:30 every Monday from April 11.
Special Note	Face-to-face lecture in room: F-482, SANKEN (The Institute of Scientific and Industrial Research) ① in https://www.sanken.osaka-u.ac.jp/en/access/
Office Hour	Monday 15:00-17:00
Keywords	
Messages to Prospective Students	Think what is intelligence. Please ask a question during a class period in public.
Course conducted by instructors with practical experience	

Instructor(s)

Instructor Name	Name (hiragana)	Affiliation, Title, Course	Office	Extension	E-mail
Numao, Masayuki	Numao, Masayuki	SANKEN, Professor, Architecture for Intelligence	F-490	8425	numao at sanken.osaka-u.ac.jp

Cautions for Students

※出欠席及び受講に関するルール：令和5年度以降のシラバス項目 / *Attendance and Student Conduct Policy: field available from FY2023