Course	Study on Methodologies of Inductive Knowledge Formation		
Course No.	02MA105	**Credits**	2.0Credits
Timetable	FallAB Fri5,6	**Grade**	1 - 3Year
Instructor	Shin-ichi Nakayama		
Course Overview	A variety of methodologies and case studies for knowledge formation are discussed. Fields of case studies are in natural science, especially protein and chemical informations, and in Kansei science.		
Remarks			

Objectives	Understand and applied knowledge formation methods.
Schedule	1)Introduction of this class 2)Inductive knowledge formation methods 3)Inductive knowledge formation methods 4)Inductive knowledge formation methods 5)Deductive knowledge formation methods 6)Abductive knowledge formation methods 7)Case studies in protein information 8)Case studies in chemical information 9)Case studies in Kansei information 10)Conclusion
Grading	Evaluate by report, attendance and participation in the lesson.
Text	Introduce in the lesson, if necessary.
References	
Office Hours	nakayama at slis.tsukuba.ac.jp
Remarks	

Course	Special Information and Resources III (Society)		
Course No.	02MA109	**Credits**	2.0Credits
Timetable	SprAB Thu3,4	**Grade**	1 - 3Year
Instructor	Yoshihiro Goto		
Course Overview	In this class, we discuss the periodization of media history. The lecturer of this class has researched the theory of Masakazu NAKAI, the first deputy chief librarian of National Diet Library, from the viewpoint of media studies. I will lecture, in the first half period of this class, reconsideration of the periodization of media history, referring to ‘ the Logic of Committee ’ (1936), the masterpiece of NAKAI which treated the periodization of media and logic. In this work, NAKAI said, “ economic and social system seeks main media of the age, and main media corresponds to main communication mode and main logic of the age. ” In the last half period of this class, I will compare the text of NAKAI with the texts of other authors, for example, Hannah ARENDT, Walter ONG, Marshall MCLUHAN, Walter BENJAMIN, Michel FOUCAULT, and so on. By this comparison, we will find out the originality and the pioneer spirit of NAKAI. This class will be mainly held by lecture but partly held by practicum. In the part of practicum of this class, members of this class must report minutely about the works written by NAKAI, ARENDT, ONG, MCLUHAN, BENJAMIN or FOUCAULT.		
Remarks	図書館情報メディア専攻英語プログラム学生からの要望があれば英語で授業 Identical to 02DMM07.		

Objectives	
Schedule	・ 1-5. Explanation about the theory of Masakazu NAKAI by the lecturer 7-9. Report about the works written by NAKAI, ARENDT, ONG, MCLUHAN, BENJAMIN or FOUCAULT by the members of this class 10. Free Discussion
Grading	
Text	
References	
Office Hours	
Remarks	

Course	Study on Interactive Information Retrieval		
Course No.	02MA113	**Credits**	2.0Credits
Timetable	SprAB Mon1,2	**Grade**	1 - 3Year
Instructor	Hideo Joho		
Course Overview	We study interaction between users and information retrieval systems from cognitive, affective, and behavioural aspects. In particular, we focus on behavioural analyses of information searching, design of search interfaces, implementations and evaluation of interactive information retrieval systems.		
Remarks	Instructor's office		
Objectives	* Understand basic concepts in Interactive Information Retrieval (IIR) * Understand and apply behaviour science approach to IIR studies * Design search interfaces based on relevant theories and models * Implement or evaluate an IIR system		
Schedule	1)Guidance 2)Basic concepts of Interactive Information Retrieval (IIR) 3)Research methods in IIR 1 4)Research methods in IIR 2 5)Research methods in IIR 3 6)Design of search interface 1 7)Design of search interface 2 8)Implementation or evaluation of an IIR system 1 9)Implementation or evaluation of an IIR system 2 10)Presentation		
Grading			
Text			
References			
Office Hours			
Remarks			

Course	Study on Information Low		
Course No.	02MA119	**Credits**	2.0Credits
Timetable	SprAB Tue3,4	**Grade**	1 - 3Year
Instructor	Kaori Ishii		
Course Overview	Through the prism of comparative legal studies, we will consider how our legal system can contribute to today's highly advanced, networked society. While AI robots are becoming more like humans every day, and IoT devices are soon to be embedded into human bodies, the lines between humans and robots might become blurred. We explore new legal frontiers like these and others and discuss the related issues.		
Remarks	Lectures are conducted in Japanese. Instructor's office		
Objectives	In this course, we discuss the latest topics concerning information and laws, then purpose to gain insights on the discussions as well as find the new issues.		
Schedule	The latest legal issues on the following topics are considered in each session. The topics can be changed according to the amendments of acts or trends in the course of ongoing discussions. 1)The right of privacy, Act on Protecting Personal Information, the so-called National ID Act 2)Criminal Codes related to the Internet (Act on Regulation and Punishment of Acts Relating to Child Prostitution and Child Pornography, and the Protection of Children, Act on Development of an Environment that Provides Safe and Secure Internet Use for Young People, etc.) 3)Jurisdiction on the internet issues 4)Acts for Consumers (Consumer Contract Act, the Act on Collective Consumer Damage Recovery System, etc.) 5)Copyright Act, Unfair Competition Prevention Act (Trade Secrets) 6)Acts on Libraries (Library Act, Public Records and Archives Management Act, etc.) 7)The right of portrait, the right of publicity 8)Election on the Internet 9)Laws for Protecting National Security (The Basic Act on Cybersecurity, Act on the Protection of Specially Designated Secrets, etc.)		
Grading	I will comprehensively evaluate the grading based on factors such as, how students positively participate in sessions, which kind of detailed insights are shown in the report.		
Text	I will present reading articles and relevant information in each session		
References			
Office Hours			
Remarks			

Course	Study on Knowledge and Information Infrastructure		
Course No.	02MA120	**Credits**	2.0Credits
Timetable	SprAB Thu5,6	**Grade**	1 - 3Year
Instructor	Saori Donkai		
Course Overview	This course covers knowledge and information infrastructure. Knowledge and information infrastructure is a social foundation that circulation that circulation, sharing, utilization and accumulation of knowledge and information generate new value. We will focus on the players, the roles and the relationship.		
Remarks	Lectures are conducted in Japanese. Instructor's office		
Objectives	The aim of this course is to help students acquire an understanding of the fundamental principles of the knowledge and information infrastructure.		
Schedule	1)Introduction: What is the knowledge and information infrastructure? 2)History of the knowledge related infrastructure (1) 3)History of the knowledge related infrastructure (2) 4)History of the knowledge related infrastructure (3) 5)Background of development of the knowledge and information infrastructure 6)Players of the knowledge and information infrastructure 7)Case studies (1) 8)Case studies (2) 9)Case studies (3) 10)Future of the knowledge and information infrastructure		
Grading			
Text			
References			
Office Hours			
Remarks			

Course	Study on Philosophy of Knowledge		
Course No.	02MA122	**Credits**	2.0Credits
Timetable	FallAB Tue5,6	**Grade**	1 - 3Year
Instructor	Mikiko Yokoyama		
Course Overview	In order to examine the concept of knowledge, this lecture deals with contemporary problems in connection with the concept of knowledge form a philosophical point of view. I will first review the history of epistemology (theory of knowledge). Then, I will examine internalism and externalism.		
Remarks			

Objectives	
Schedule	1)The history of epistemology (theory of knowledge) 1 2)The history of epistemology (theory of knowledge) 2 3)The history of epistemology (theory of knowledge) 3 4)The history of epistemology (theory of knowledge) 4 5)Problems in connection with the concept of knowledge (in contemporary philosophy) 1 6)Problems in connection with the concept of knowledge (in contemporary philosophy) 2 7)Problems in connection with the concept of knowledge (in contemporary philosophy) 3 8)Internalism 9)Externalism 10)Conclusion
Grading	
Text	
References	1. Chisholm, R.M. Theory of Knowledge. Third edition, Prentice Hall, 1989.(『知識の理論 第 3 版』上枝美典訳, 世界思想社, 2003)
Office Hours	
Remarks	

Course	Study on Copyright Law		
Course No.	02MA123	**Credits**	2.0Credits
Timetable	FallAB Tue5,6	**Grade**	1 - 3Year
Instructor	Maiko Murai		
Course Overview	This course deals with the copyright law. At the end of the course, paticipants are expected to understand key challenges of recent copyright law, and discuss the problem about copyright.		
Remarks	Lectures are conducted in Japanese.		

Objectives	This course deals with the copyright law. At the end of the course, paticipants are expected to understand key challenges of recent copyright law, and discuss the problem about copyright.
Schedule	Students taking this course will discuss about articles and cases about copyright law.
Grading	
Text	1. 田村善之『知的財産法』(第 5 版・有斐閣) 2. 田村善之『著作権法概説』(第 2 版・有斐閣)
References	
Office Hours	
Remarks	

Course	Study of Information Analysis		
Course No.	02MA306	**Credits**	2.0Credits
Timetable	FallAB Thu5,6	**Grade**	1 - 3Year
Instructor	Nobuyuki Midorikawa		
Course Overview	With respect to the classification related to the content of the information media, analytical techniques, theoretical background and significance, and the expressive methods of the results will be discussed. More specifically, history and comparison of various classification system is described.		
Remarks	Lectures are conducted in Japanese. Instructor's office		
Objectives			
Schedule	1)We read articles on classification systems and discuss on them.		
Grading			
Text			
References			
Office Hours			
Remarks			

Course	Study of Information Organization		
Course No.	02MA307	**Credits**	2.0Credits
Timetable	FallAB Tue5,6	**Grade**	1 - 3Year
Instructor	Eiji Mizushima		
Course Overview	情報メディアの組織化および情報メディアに含まれる情報の組織化について, 対象の分析・構造化とその記述・表現手法, さらには記述・表現結果の共有と統合などについて論ずる.		
Remarks	Instructor's office		
Objectives	Museums, Archives and other memorial institutions, are a kind of social phenomenon. Tracing the history of the memorial institutions, this course covers Musealization in the Museology (Museum studies) from several aspects, such as information science (collection management, documentation, cataloguing), sociology, political science, cultural policy and philosophy. How do we control the information, how do we create information–this is the main theme of the course.		
Schedule	Every two weeks, student(s) should make an presentation about the special theme of the dissertation. ・ What is museology? How do we describe the social phenomenon of muselization? ・ Tracing the history of the memorial institutions ・ Collection management, documentation, cataloguing ・ How do we control the information - case studies : Asian countries ・ How do we create information - case studies : Asian countries		
Grading	Report (70%) and participation for the course (30%)		
Text	1. tracey L-D Lu,Museums in China, Power, Politics and Identities, Routledge, 2014		
References			
Office Hours	Monday, 15:15-18:00 7D303 mizushima at slis.tsukuba.ac.jp		
Remarks			

Course	Study of Library Governance		
Course No.	02MA311	**Credits**	2.0Credits
Timetable	SprAB Fri7,8	**Grade**	1 - 3Year
Instructor	Hiroshi Itsumura		
Course Overview	図書館におけるガバナンスを論じる. 基礎的なガバナンスの理解をもとにと今日の社会及び情報環境の変容に対して, 図書館がどのようなガバナンスのもとにその対応を果たすべきかを検討する. 具体的な事例および図書館に関わるデータをもとにあるべきガバナンスの在り方を研究する.		
Remarks			

Objectives	Understand the library governance.
Schedule	1)Theory of governance and library 1 2)Theory of governance and library 2 3)Case study of the governance 1 Public library 4)Case study of the governance 2 Academic library 5)Case study of the governance 3 Consortia and library 6)Library governance 7)Research discussion about library governance 1 8)Research discussion about library governance 2 9)Research discussion about library governance 3 10)Research discussion about library governance 4
Grading	
Text	
References	
Office Hours	hits at slis.tsukuba.ac.jp
Remarks	

Course	Study on School media center		
Course No.	02MA312	**Credits**	2.0Credits
Timetable	FallAB Thu3,4	**Grade**	1 - 3Year
Instructor	Yuji Hirakue		
Course Overview	In this study, we treat core research papers on management of school media centers regarding curriculum development of library use education or professional education and training for school librarians and so on. We discuss and consider important matters or problems based on them.		
Remarks	Lectures are conducted in Japanese.		
Objectives			
Schedule	The first time: The introduction of this class The second time to the fifth time: Students taking this lecture select some topics from core papers on management of school media centers and report them. The six time to the nine time: The students select some common topics between management of school media centers and their own specialties, and then report and present them. The last time: We review what we did in this class.		
Grading			
Text			
References	1. 日本図書館情報学会研究委員会編, 学校図書館メディアセンター論の構築に向けて:学校図書館の理論と実践 2. Woolls, Blanche; Loertscher, David V.,The Whole School Library Handbook		
Office Hours	hirakue at slis.tsukuba.ac.jp		
Remarks			

Course	Study on Information and Media Services		
Course No.	02MA313	**Credits**	2.0Credits
Timetable	SprAB Tue5,6	**Grade**	1 - 3Year
Instructor	Yuko Yoshida		
Course Overview	Cultural diversity is an important aspect of contemporary libraries. Public libraries need to offer appropriate services based on the cultural characteristics of users in light of race, ethnicity, gender, sexual orientation and age. This course focuses on library services for minority groups conducted in Scandinavian Countries. Firstly, this course examines particular cases in Denmark, Sweden, and Norway. Secondly, the course considers challenges and problems of library and information services to diverse library users examining the conceptual framework and theories of the issues with special reference to the relationship of library institutions to their contemporary social, cultural and political environments.		
Remarks	Lectures are conducted in Japanese.		
Objectives	Through the course, students will be able to appreciate practices and theories of public library services for minority in Scandinavian countries.		
Schedule	1)Cultural diversity and public librarianship: Introduction 2)Cultural diversity and public librarianship: Practices and theories 3)Library services for minority: Danish Public Libraries 1 4)Library services for minority: Public libraries in Denmark 2 5)Library services for minority: Swedish Public libraries in Sweden 1 6)Library services for minority: Swedish Public libraries in Sweden 2 7)Library services for minority: Swedish Public libraries in Norway 1 8)Cultural diversity and library services in Norway 2 9)Cultural diversity and library services in Finland 10)Cultural diversity and public librarianship: Challenges and future perspectives		
Grading	Class participation(20%), presentation(50%), discussion(30%)		
Text			
References			
Office Hours			
Remarks			

Course	Planning on Information Community		
Course No.	02MA314	**Credits**	2.0Credits
Timetable	SprAB Tue3,4	**Grade**	1 - 3Year
Instructor	Atsushi Toshimori		
Course Overview	Planning and evaluation for services/facilities that provides information in the community are presented and discussed in this class. The topics of this course are: behavioral choice modelling and others.		
Remarks			

Objectives	
Schedule	1)Introduction 2)Overview of the Behavioral Choice Model 3)Design of the Survey 1 4)Design of the Survey 2 5)Estimation of the Model 1 6)Estimation of the Model 2 7)Estimation of the Model 3 8)Case Study 1 9)Case Study 2 10)Discussion
Grading	
Text	
References	
Office Hours	Wed. 9:30-11:30 7B213(学類長室) tosimori at slis.tsukuba.ac.jp
Remarks	

Course	Study on Informetrics		
Course No.	02MA318	**Credits**	2.0Credits
Timetable	FallAB Tue3,4	**Grade**	1 - 3Year
Instructor	Fuyuki Yoshikane		
Course Overview	In this course, we discuss theories and methods of informetrics from two viewpoints: (1) investigation of patterns of information production, circulation, cumulation, and use; (2) practical application of informetric measures. We also discuss recent research findings concerning informetrics, scientometrics, and webometrics.		
Remarks	Lectures are conducted in Japanese.		

Objectives	
Schedule	1)guidance 2)theories of informetrics (1) 3)theories of informetrics (2) 4)theories of informetrics (3) 5)practical application of informetric measures (1) 6)practical application of informetric measures (2) 7)practical application of informetric measures (3) 8)recent research findings concerning informetrics (1) 9)recent research findings concerning informetrics (2) 10)recent research findings concerning informetrics (3)
Grading	
Text	
References	
Office Hours	
Remarks	

Course	Study of Media Physics		
Course No.	02MA502	**Credits**	2.0Credits
Timetable	FallAB Tue5,6	**Grade**	1 - 3Year
Instructor	Makoto Matsumoto		
Course Overview	Recently, large capacity of magnetic recording medium, solid state device and optical storage medium are being developed and the importance of the equipment of media in an information system is increasing . In this lecture, the physical property of the media is elucidated using theoretical physics. Specifically, relation between the knowledge obtained by first-principle calculation and the various physical properties is explained.		
Remarks			

Objectives	Through reading of the English papers of science (physics-related), improve your logical thinking skill and study the most advanced research and thecnology.
Schedule	1)Orientation 2)Introduction to recording media I 3)Introduction to recording media II 4)Presentaion in turn I 5)Presentation in turn II 6)Collecting documents that are necessary for studing I 7)Collecting documents that are necessary for studing II 8)Introduce collecting articles I 9)Introduce collecting articles II 10)Discussion and final presentaion
Grading	Report, Presentation and participation condition
Text	
References	
Office Hours	Monday 10:00-11:30 amy at slis.tsukuba.ac.jp http://www.slis.tsukuba.ac.jp/˜amy/
Remarks	

Course	Study of Information Access Systems		
Course No.	02MA503	**Credits**	2.0Credits
Timetable	SprAB Thu1,2	**Grade**	1 - 3Year
Instructor	Tetsuji Satoh		
Course Overview	ネットワーク化される多様な情報・コンテンツに自在にアクセスするための検索・流通・個人化技術の高度化とシステム化手法について深耕する. 具体的な課題を設定して, 関連する要素技術, システム構築技術等を論ずる.		
Remarks	Lectures are conducted in Japanese.		

Objectives	Understand social demands and expectations for information access systems and technical constraints that can be realized, and acquire methodologies to grasp the clues of research and development that will become new breakthroughs.
Schedule	In this fiscal year, we will investigate previous research on information search and study future trend of research. 1)orientation 2)Research and presentation of research and technology trends (1) 3)Research and presentation of research and technology trends (2) 4)Research and presentation of research and technology trends (3 5)Research and presentation of research and technology trends (4) 6)Research and presentation of research and technology trends (5) 7)Research discussion (1) 8)Research discussion (2) 9)Research discussion (3) 10)Summary
Grading	Based on the report, attendance situation and participation situation in the lesson, it is evaluated.
Text	Instruct during class.
References	
Office Hours	http://www.slis.tsukuba.ac.jp/˜satoh/index-j.html
Remarks	

Course	Numerical Processing		
Course No.	02MA506	**Credits**	2.0Credits
Timetable	SprAB Tue1,2	**Grade**	1 - 3Year
Instructor	Hidehiko Hasegawa		
Course Overview	The computation of PageRank and SVM requires some large numerical computation methods based on the Mathematical procedure. This course targets Numerical Processing algorithms used in many research fields and discusses the applications to High Performance Computing environments based on their theoretical backgrounds. Students are required to understand relevant knowledge about fair comparison of implemented algorithms and to evaluate them by using comparing points defined by themselves. This lecture covers topics on algorithms in the Numerical Linear Algebra such as Direct method for the solution of the system of Linear Equations, Iterative method for the solution of the system of Linear Equations, Eigenvalue Analysis, and analysis of Singular Value Decomposition, and so on. The computing environment includes serial processing, shared memory Parallel Processing with OpenMP, distributed memory Parallel Processing with MPI, and Co-processor such as GPU, and so on.		
Remarks	Lectures are conducted in Japanese.		
Objectives	Students will be able to understand the important points in Large Numerical Processing through experience in implementing algorithms as Software. Students will be able to evaluate some new proposed methods.		
Schedule	The classes will cover topics on Numerical Linear Algebra and High Performance Computing. The following order may be changed. 1)Introduction to Numerical Linear Algebra 2)Direct method for the solution of the system of linear equations 3)Iterative method for the solution of the system of linear equations 4)Eigenvalue Analysis for symmetric matrices 5)Singular Value Decomposition 6)Basics for Large Matrix Computations 7)Parallel Processing using OpenMP on Shared Memory Computer 8)Parallel Processing using MPI on Distributed Computers 9)Co-processor and GPU 10)Software and Algorithms in Large Numerical Computations		
Grading	Grading will be based on the your implementation results of algorithms and the report on evaluating them.		
Text	Related documents will be shown during the class.		
References			
Office Hours			
Remarks			

Course	Computer Algebra Systems		
Course No.	02MA508	**Credits**	2.0Credits
Timetable	FallAB Tue5,6	**Grade**	1 - 3Year
Instructor	Shuichi Moritsugu		
Course Overview	We study the future development of mathematical software as a fundamental component of information media systems. To expand the present computer algebra systems, the development of new efficient algorithms will be discussed.		
Remarks	Lectures are conducted in Japanese.		
Objectives			
Schedule	Using the textbook "Polynomial Algorithms in Computer Algebra" by Franz Winkler, (Springer, 1996), some of the following sections will be discussed. 1)Introduction 2)Arithmetic in basic domains 3)Computing by homomorphic images 4)Greatest common divisors of polynomials 5)Linear algebra - solving linear systems 6)The method of Groebner bases		
Grading			
Text			
References			
Office Hours	moritsug at slis.tsukuba.ac.jp		
Remarks			

Course	Knowledge and Information Space		
Course No.	02MA510	**Credits**	2.0Credits
Timetable	SprAB Thu1,2	**Grade**	1 - 3Year
Instructor	Norihiko Uda		
Course Overview	In this course, we research on knowledge and information space that includes human knowledge and recorded knowledge.		
Remarks			
Objectives	Students can consider interaction between human knowledge and recorded knowledge from many different viewpoints.		
Schedule	1)structure of knowledge and information space 2)human knowledge space (1) : epistemology 3)human knowledge space (2) : scientific knowledge 4)human knowledge space (3) : common knowledge 5)recorded knowledge space (1) : semiology 6)recorded knowledge space (2) : text 7)recorded knowledge space (3) : documents 8)interaction of knowledge (1) : information 9)interaction of knowledge (2) : media 10)interaction of knowledge (3) : system		
Grading			
Text			
References			
Office Hours			
Remarks			

Course	Structured Document Processing Technology		
Course No.	02MA511	**Credits**	2.0Credits
Timetable	SprAB Thu3,4	**Grade**	1 - 3Year
Instructor	Nobutaka Suzuki		
Course Overview	This course discusses formal descriptions and its expressiveness of schema definition languages, query languages, and transformation languages of structured documents such as XML. This course also discusses the computational complexity of major problems such as XSLT typechekikng problem and XPath satisfiability problem.		
Remarks			
Objectives			
Schedule	1)XML and algorithms for tree structured data (1) 2)XML and algorithms for tree structured data (2) 3)XML and algorithms for tree structured data (3) 4)XPath satisfiability problem (1) 5)XPath satisfiability problem (2) 6)XPath satisfiability problem (3) 7)Graph algorithms (1) 8)Graph algorithms (2) 9)Graph algorithms (3) 10)Exercise		
Grading			
Text			
References			
Office Hours			
Remarks			

Course	Exploratory Search Systems		
Course No.	02MA515	**Credits**	2.0Credits
Timetable	FallAB Mon5,6	**Grade**	1 - 3Year
Instructor	Masao Takaku		
Course Overview	This course gives lectures on the state of the art of researches in the field of exploratory search systems.		
Remarks	Instructor's office		
Objectives			
Schedule	1)Overview of researches on exploratory search systems, information access, and information seeking behaviors 2)Research methodologies in the field of exploratory search systems 3)Evaluation methodologies in the field of exploratory search systems 4)		
Grading			
Text			
References			
Office Hours	masao at slis.tsukuba.ac.jp		
Remarks			

Course	Study on Data Analysis		
Course No.	02MA516	**Credits**	2.0Credits
Timetable	SprAB Tue3,4	**Grade**	1 - 3Year
Instructor	Taro Teduka		
Course Overview	Data analysis algorithms using machine learning and statistics will be developed and evaluated through application to real data. Theoretical analysis will be conducted if necessary.		
Remarks			
Objectives	In this course, various methods of data analysis are explored using real data such as images and time series. Based on a solid theoretical foundation, methods are put to practice for applications including image recognition and signal decoding.		
Schedule			
Grading			
Text			
References			
Office Hours			
Remarks			

Course	Computational Linguistics		
Course No.	02MA517	**Credits**	2.0Credits
Timetable	SprAB Tue3,4	**Grade**	1 - 3Year
Instructor	Yohei Seki		
Course Overview	In this class, we will learn statistical natural language processing technology. We will study language model as a basis, then topic model and distributed representation as a new NLP technologies. Finally, we will study NLP applications framework such as machine translation or sentiment analysis, etc. based on new NLP technologies.		
Remarks			

Objectives	We will learn new statistical NLP technologies.
Schedule	1)What is statistical NLP? 2)language model and statistical NLP 3)Topic Model: Overview 4)Topic Model: Latest Research Literatures 5)Topic Model: Tool and Implementation 6)Distributed Representation: Overview 7)Distributed Representation: Latest Research Literatures 8)Distributed Representation: Tool and Implementation 9)Statistical NLP applications: Machine Translation and Sentiment Analysis 10)Summary
Grading	
Text	
References	
Office Hours	
Remarks	

Course	Cognitive Information Processing		
Course No.	02MA702	**Credits**	2.0Credits
Timetable	FallAB Thu3,4	**Grade**	1 - 3Year
Instructor	Yuzuru Hiraga		
Course Overview	Lecture and discussion on studies on Human Cognitive Activities (e.g. reasoning, language, perception, emotion) will be given, focused mainly on computational approaches and how cognitive capabilities can be realized on computers. Typical topics are computational modeling of structural cognition including music cognition, language understanding and logical inference.		
Remarks			

Objectives	Based on the study of existing work in the field, understand the basics of computational modeling, and develop experience and capability to create research-level applications.
Schedule	1st˜3rd class: Review and study on the basics of computational modeling. 4th class and on: Select a specific theme of interest, do an intensive survey and reading on related papers and advanced textbooks, and develop test programs/systems based on the acquired knowledge and skills.
Grading	Grades will be judged on 2-3 report submissions and classroom performance/attitudes in reading, presentation and discussion.
Text	(none)
References	To be announced/presented in class.
Office Hours	(no fixed schedule) hiraga at slis.tsukuba.ac.jp http://www.slis.tsukuba.ac.jp/˜hiraga/
Remarks	

Course	Technologies for Contents Sharing Infrastructure		
Course No.	02MA705	**Credits**	2.0Credits
Timetable	SprAB Mon5,6	**Grade**	1 - 3Year
Instructor	Shigeo Sugimoto		
Course Overview	Discussion on digital libraries, digital archives in the networked information environment, mainly from the viewpoint of metadata.		
Remarks			

Objectives	Discussion on digital libraries, digital archives in the networked information environment, mainly from the viewpoint of metadata.
Schedule	Students are required to have basic knowledge about metadata on the Internet and digital libraries. The content is determined based on the background of enrolled students. 1)1-3: discussion on the basic concepts and technologies of metadata on the Internet and those of digital libraries 2)4-6: assigned reading of papers 3)7-10: exercises of metadata creation and use in the linked data environment
Grading	by reports
Text	No textbook is used Reading materials will be given at a class
References	
Office Hours	
Remarks	

Course	Information Design Expression Research		
Course No.	02MA712	**Credits**	2.0Credits
Timetable	FallAB Tue3,4	**Grade**	1 - 3Year
Instructor	Sangtae Kim		
Course Overview	In this lecture, to learn the historical flow of computer graphics. And to understand the basic principles of CG technology in light of the position. Consider the expression technique and utilization by taking advantage of it. In addition, to understand the latest technology trends, learn about the use of CG in the art and design field with ideas deployment of a new representation method in the graphics design field.		
Remarks	Lectures are conducted in Japanese.		

Objectives	In this lecture, you will learn the historical flow of computer graphics. And, to understand the basic principles of CG technology, we consider the use and expression technology. In addition, in order to understand the latest technology trends, you will learn about the use of CG in the deployment and the art and design field of the idea of a new representation method.
Schedule	1)Guidance 2)Arts and Design & Technology 3)Thinking of information design 4)Computer graphics and basic knowledge 5)Design techniques and CGI 6)CGI field advanced research ・ PIXAR short film 7)CGI field advanced research Sea graph (SIGG) shot film 8)3DCG modeling rendering technique 9)Image Making for advertising 10)Summary
Grading	Small report [40%] of several times to impose in class, Final report [40%], Attendance - 20%], Unit certification requirements shall not be less than 60 points.
Text	None
References	The history of computer graphics, Takayuki Oguchi, Film Art, Inc., 2009 Introduction CG design, CG-ARTS Association, 2010 Video Production by digital video expression CG , CG-ARTS Association, 2010
Office Hours	
Remarks	

Course	Technologies for Content Management Infrastructure		
Course No.	02MA719	**Credits**	2.0Credits
Timetable	SprAB Wed6,7	**Grade**	1 - 3Year
Instructor	Atsuyuki Morishima		
Course Overview			
Remarks	Instructor's office		
Objectives	Students who finish the course will be able to do research on technologies for content management infrastructures and write paper on the topic.		
Schedule	1)Introduction 2)How to find problems 3)Research Reviews (1/2) 4)Research Reviews (2/2) 5)How to formalize problems and methods (1/2) 6)How to formalize problems and methods (2/2) 7)How to make stories and write the introduction 8)How to evaluate your methods (1/2) 9)How to evaluate your mehotds (2/2) 10)Discussions		
Grading	Attendance 40% Paper review 30% Presentation 30%		
Text			
References			
Office Hours	Monday 11:30AM to 0:30PM 7D507 morishima-office@ml.cc.tsukuba.ac.jp http://www.kc.tsukuba.ac.jp/˜mori/ amorishima at acm.org http://www.kc.tsukuba.ac.jp/˜mori/		
Remarks			

Course	Study of Communication and Collaboration Support System		
Course No.	02MA720	**Credits**	2.0Credits
Timetable	FallAB Mon3,4	**Grade**	1 - 3Year
Instructor	Tomoo Inoue		
Course Overview	Human communication have been expanding its environment, which includes the use of various electronic devices and computer networks. The environment affects communication and resulting collaborative activity themselves. This course provides viewpoint and discussion on this communication and collaboration environment through latest research papers of the HCI and CSCW fields.		
Remarks	Instructor's office		

Objectives	Through the course the student is expected to 1) Know information technologies to build information media environment for supporting communication and collaboration 2) Be able to design appropriate information technology environment based on the understanding of human behavior
Schedule	1. Support and augmentation of communication 2. Support and augmentation of collaboration 3. Support and augmentation of awareness 4. Support and augmentation of presence are discussed.
Grading	Presentation and participation in the class, and the quality of submitted assignements
Text	Introduced in the class
References	
Office Hours	http://inolab.slis.tsukuba.ac.jp/
Remarks	

Course	Research in Cognitive Psychology		
Course No.	02MA722	**Credits**	2.0Credits
Timetable	FallAB Fri3,4	**Grade**	1 - 3Year
Instructor	Hiromi Morita		
Course Overview	In this course you will learn the basics and recent studies in cognitive psychology by reading journal articles, and acquire the skill of taking up a question from everyday life, making a cognitive psychological hypothesis, and conducting research using empirical methods.		
Remarks	at the professor's office, in Japanese Lectures are conducted in Japanese.		
Objectives	1) To know how to read articles on empirical research in cognitive psychology 2) To acquire the basic knowledge of cognitive psychology 3) To acquire the knowledge about how to plan psychological experiments, decide independent variables, and select dependent variables 4) To get knowledge about how to draw implications from results		
Schedule	1)Reading a basic article on a recent topic in cognitive psychology and explaining basic framework and knowledge 2)Reading a basic article on a recent topic in cognitive psychology and explaining basic framework and knowledge 3)Reading one of the latest articles on the topic and explaining the objective, background, and the hypothesis of the research 4)Explaining why the dependent and independent variables were selected and how the result is represented, analyzed, and interpreted 5)Explaining how the implication and conclusion are derived and described and discussing the future research issues 6)Reviewing literature on this subject 7)Designing a simple experiment aiming to clarify above mentioned subject. Discussing background, issue, hypothesis, and dependent and independent variables of the experiment and describing them 8)Constructing the simple experimental system and conducting the experiment 9)Discussing the implications of result. Analyzing result statistically, expressing it in a graph and explaining them in writing 10)Discussing to draw the implication and conclusion, and describing it in writing 11)Submitting a short report		
Grading			
Text			
References			
Office Hours			
Remarks			