

Cross-Graduate School Subjects for AY 2024

Classification:

- ① Advanced liberal arts education at the graduate level ② Cultivation of skills necessary in modern society, such as AI, mathematics, and data education
 ③ Education to improve research skills such as English and presentations ④ Cultivation of wide-ranging skills such as transferable skills ⑤ Education on ethical, legal, and social issues (ELSI)

No.	Courses offered Graduate School	Course Title	Credits	Instructors	Course Code	Curricula	Grade					Terms	Day of the week	Lecture period	Course method	Course method	Language used in courses	Classification ①~⑤	Object and Summary of Class	対象 (主専攻・主専攻・他専攻)	Note	
							M1	M2	D1	D2	D3											D4
1	Economics and Management	Investment and Security Analysis	2	室井 芳史 Yoshihumi Muroi	EM0307	Master's Program	○	○					1st Term	Mon.	3	Face-to-face	Lecture room 8, Graduate School of Economics and Management Building	Japanese	②	This lecture gives a course on mathematical finance including stochastic interest rate modeling.	All fields	
2	Economics and Management	Econometrics I	2	Runyu Dai	EM4702	Master's Program	○	○					1st Term	Tue.	2	Face-to-face	Small Lecture Room 3, Multidisciplinary Research Building	English	②③	This course is a one-semester introduction to probability theory and statistics for economists. The course will cover fundamental knowledge of probability and statistics for the preparation of subsequent econometrics courses. The R program will be demonstrated. The students are expected to have a deep understanding of probability and statistics. Good command of knowledge covered in this course will also facilitate studying other economic courses.	All fields	
3	Economics and Management	Econometrics II	2	Stanley Ko	EM4704	Master's Program	○	○					2nd Term	Tue.	2	Face-to-face	Small Lecture Room 3, Multidisciplinary Research Building	English	②③	This course is a one-semester introduction to econometrics. The course will cover fundamental knowledge of linear regression in economic data analysis. Necessary probability and statistic concepts will be taught and reviewed. Empirical applications, rather than theoretical proofs, will be emphasized. Empirical examples will be demonstrated in class. The R program will be demonstrated. The students are expected to have a deep understanding of modern econometric methods in economic data analysis. Also, the course is designed as a prerequisite for advanced econometrics courses. The students will be able to apply basic econometric tools in empirical research (cross-sectional data) after the course.	All fields	
4	Economics and Management	Health Economics	2	湯田 道生 Michio Yuda	EM0415	Master's Program	○	○					2nd Term	Tue.	1	Face-to-face	Lecture room 8, Graduate School of Economics and Management Building	English	①②③④⑤	This class provides the theoretical backgrounds of major topics in health economics at the master level after quickly introducing those of the undergraduate level. This class also provides basic causal inference and microeconometrics methods used in recent health economics studies.	All fields	I presuppose that students have already gained the knowledge of microeconomics, macroeconomics, and econometrics at the undergraduate level.
5	Economics and Management	Data Science in Economics	2	石原 卓弥 Takuya Ishihara	EM0050	Master's Program	○	○					1st Term	Mon.	3	Face-to-face	Lecture room 3, Graduate School of Economics and Management Building	Japanese	②	Asymptotic theory is the primary method used to examine the properties of econometric estimators and tests. This course offers the asymptotic theory for econometrics.	Science and Engineering	Participants are prerequired to have sufficient knowledge on mathematics and statistics.
6	Economics and Management	Regional Enterprises	2	福岡 路 Michi Fukushima	EM0420	Master's Program	○	○					1st Term	Fri.	6	Face-to-face	Small Lecture Room 3, Multidisciplinary Research Building	English	①③⑤	The purpose of the course is for students to understand the features of Japanese businesses, especially focusing on SMEs and Regional Enterprises (REs) and their surroundings. In addition, related theories and concepts are introduced showing examples.	All fields	- This Course is in English. - The participants must read the assigned case and prepare for the discussion.
7	Economics and Management	Nonprofit Organization	2	西出 優子 Yuko Nishide	EM0421	Master's Program	○	○					2nd Term	Fri.	2	Face-to-face	Small Lecture Room 2, Multidisciplinary Research Building	English	③⑤	This course aims at acquiring basic knowledge and concepts on nonprofit organizations and their management striving to solve various social problems and to create social values, and social capital. Topics relating to the role, significance and management of nonprofit organizations are examined through lectures, case studies, student presentations and discussions.	All fields	- This course will be taught in English. - Students are expected to read textbook/article and prepare for effective understanding, presentations, discussions and minute paper at each class.
8	Economics and Management	Management	2	高浦 康有 Yasunari Takaura	EM0040	Master's Program	○	○					2nd Term	Tue.	2	Face-to-face	Small Lecture Room 2, Multidisciplinary Research Building	Japanese	①	This lecture will let you learn the perspectives how to construct any management theory through exploring academic text books. We would like to compare positivism approach for establishing objective laws with behaviorism approach for understanding inter subjective motivations in relevant actors.	All fields	
9	Economics and Management	Marketing Research	2	石垣 司 Tsukasa Ishigaki	EM0027	Master's Program	○	○					1st Term	Wed.	3	Face-to-face	Lecture room 8, Graduate School of Economics and Management Building	Japanese	②	In this course, students will understand some typical data analysis methods for marketing research and develop data analysis skills using programming language.	All fields	We will conduct classes based on the following four knowledge and skills. - Knowledge of calculus (Lagrange undetermined multiplier method and degree of differentiation of streams and sequences) - Knowledge of linear algebra (eigenvalue decomposition) - Knowledge of econometrics (linear regression model and testing of regression coefficients) - Programming experience in R (programming classes are not taught in class)

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							M	T	W	D	F													
10	Economics and Management	Environmental Economics	2	白引 聡 Akira Hibiki	EM0412	Master's Program	○	○						2nd Term	Mon.	3	Face-to-face	Lecture room 1, Graduate School of Economics and Management Building	English	①②③⑤	This course applies standard microeconomic theory and concepts to understand the role of environmental policy.	All fields	This course will be taught in English. The materials for the lectures are distributed in the class. The students must have basic knowledge of microeconomics. If they have not studied microeconomics, read the attached file to prepare for this course before the course starts.	
11	Science	Advanced Solar System Physics	2	笠羽 康正 他 Yasumasa Kasaba et al.	SM42001	Master's Program	○	○						2nd Term	Mon.	3	Online	Online	English	①	Human beings are promoting space exploration by utilizing space probes and space vehicles to expand habitable area in the solar system. We will give detail explanations on the space exploration along with following three accepts; i.e. scientific aspects, engineering aspects and life aspects.	Science and Engineering	・ It is also an interdisciplinary DIARE courses.	
12	Science	Science and Society	1	本堂 毅 Tsuayoshi Hondou	SM7101	Master's Program, Doctoral Program	○	○	○	○	○	○		1st Term	6/1	10:00~18:00	Face-to-face	Science Complex C Aoba Science Hall	Japanese	①④⑤	Course Title: What is scientific proof? Scientific incertitude and Society Understanding of incertitude about those questions is basis for constructive discussion between scientists and society. We will discuss how these issues are related to the issues between science and society.	All fields		
13	Science	Science Communication	1	本堂 毅 Tsuayoshi Hondou	SM7102	Master's Program, Doctoral Program	○	○	○	○	○	○		1st Term	6/15	10:00~18:00	Face-to-face	Science Complex C Aoba Science Hall	Japanese	①④⑤	Course Title: Social decision-making and science Scientific knowledge is indispensable in decision-making in society. In this course, I would like to show actual condition in the world and discuss the competency desired both for lawyers, politician and scientists. Finally, we will discuss the institutional reforms.	All fields		
14	Medicine	Research Promotion & Research Ethics	1	Charge Teachers	MD001	Doctoral Program		○	○	○	○			2nd Term	Intensive course	未定	未定	未定	未定	Japanese	①	Cultivation of the attitude and skills required to promote research	All fields	・ Approximately 6 lectures by celebrities, medical professionals, and researchers ・ Only lectures, with the exception of research proposal writing training, which is given to students in the Graduate School of Medicine, and is therefore one credit for students in other graduate schools.
15	Pharmaceutical Sciences	Advanced Molecular and Structural Analysis	3	金野 智浩 Tomohiro Konno	YM4111211 2	Master's Program	○	○						1st Term	Thurs.	9:00~12:00	Face-to-face	Graduate School of Pharmaceutical Sciences Small Lecture Room 1	Japanese	①	生体内のイオンからタンパク質やDNAなどの生体高分子やバイオマテリアルなどの合成高分子にいたるまでの広範な分子の挙動を、主に物理化学的な原理に立脚して統一的に理解する方法論を学ぶ。さらに、これらの方法論が実際の機器分析法を通じて、生体分子の構造解析や医薬品の定量分析にどのように用いられているかを理解する。	Science and Engineering		
16	Pharmaceutical Sciences	Advanced Organic Chemistry	2	吉戒 直彦 Naohiko Yoshikai	YM9000931 2	Master's Program	○	○						1st Term	Thurs.	9:00~12:00	Face-to-face	Graduate School of Pharmaceutical Sciences Small Lecture Room 1	Japanese	①	本特論では、新規医薬品の開発に求められる有機反応論の概念と論理体系、ならびに目的とする有機化合物を効率的に合成するための方法論を理解することを目的とする。これらを講義と演習によって習得する。	Science and Engineering		
17	Pharmaceutical Sciences	Advanced Applied Bio-pharmaceutical Sciences	3	高橋 信行 Nobuyuki Takahashi	YM4121211 7	Master's Program	○	○						1st Term	Thurs.	18:00~19:30	Online	Online	Japanese	①	新薬の価値はヒトを対象とした臨床試験および市販後調査での有効性、安全性の結果で決まる。本特論で臨床研究および臨床試験・治験を進行する上で必要となる基本的な知識と技術を理解する。医薬開発を目的とした基礎研究、質のよい臨床試験を実施するための、基礎知識、倫理、方策を学ぶ。	Science and Engineering	・ 医療薬学特別講義Ⅱと同時開講	

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18	Pharmaceutical Sciences	Special Lecture in Pharmacy II	2	高橋 信行 Nobuyuki Takahashi	YD90012502	Doctoral Program							1st Term	Thurs.	18:00~19:30	Online	Online	Japanese	①	新薬の価値はヒトを対象とした臨床試験および市販後調査の有効性、安全性の結果で決まる。本特講で臨床研究および臨床試験・治験を進行する上で必要となる基本的な知識と技術を習得する。医薬開発を目指した基礎研究、質の高い臨床試験を実施するための、基礎知識、倫理、方策を学ぶ。	Science and Engineering	・応用医薬薬学特講と同時開講
19	Engineering	History of Modern Technology	2	田中 秀治 他 Shuji Tanaka et al.	TD10002000	Doctoral Program							Intensive course	Intensive course	1~4	Online	Online	Japanese	①	技術史を学ぶことは、技術の原理と系譜、技術進化の必然性、社会と技術との関わり、試行錯誤の経緯と帰結、先人の成功と挫折などを理解することに繋がります。鉱山、巨大ダム、記憶装置、通信装置、半導体集積回路など、身近な技術の発展の歴史を、また、一部については衰退の歴史も学びます。それぞれの技術史には他の技術開発にも活かせる考え方や教訓が含まれ、それを受講者自身が考えることによって各自の仕事や勉強に活かすことを本講義の眼目としています。	All fields	・日本語講義
20	Engineering	Hardware Fundamentals	2	羽生 貴弘 他 Takahiro Hanyu et al.	TM20012000	Master's Program							Undecided	Undecided	Undecided	Undecided	Information Science	Japanese	①	集積回路技術とプロセッサアーキテクチャ、さらに知能処理が融合された知能集積システムの基礎を講義する。講義内容は、知能集積システムの意義、高性能化と低消費電力化を指向したVLSIプロセッサのハイベルシオンシス、CMOS集積回路の高性能化と低消費電力化、リコフィギャラブルVLSI、配線に起因する性能劣化を低減させる高性能VLSIの回路技術、電源配線及びクロック分配に関わる実装技術、システムLSIの統合設計技術などである。	Science and Engineering	・履修人数上限：30名
21	Engineering	Introduction to Semiconductor Device Physics and Technology	2	黒田 埋人 Rihito Kuroda 櫻庭 政夫 Masao Sakuraba	TM20011000	Master's Program							Undecided	Undecided	Undecided	Undecided	EPIE Lecture Room Building 207	Japanese	①	固体電子論の基礎からデバイス動作までを、統一的に理解するための基礎を修得する事を目的とする。固体中の電子運動論、半導体の接合・境界での電子・正孔の挙動、MOSトランジスタの動作等について講義する。	Science and Engineering	
22	Engineering	Molecular Electronics	2	平野 愛弓 Ayumi Hirano	TM20063500	Master's Program							Undecided	Undecided	Undecided	Undecided	TBD	Japanese	①	次世代エレクトロニクスの中核と考えられている分子電子デバイスに関連した分子や超分子の基礎を講義する。講義内容は、知能集積システムの意義、高性能化と低消費電力化を指向したVLSIプロセッサのハイベルシオンシス、CMOS集積回路の高性能化と低消費電力化、リコフィギャラブルVLSI、配線に起因する性能劣化を低減させる高性能VLSIの回路技術、電源配線及びクロック分配に関わる実装技術、システムLSIの統合設計技術などである。	Science and Engineering	・履修中の発表（質問への解答や、内容へのコメント等）をもつて、出席扱いとしているため、大人数の受講には不向きです。 ・履修人数上限：18名程度
23	Engineering	Biosensing	2	吉備 達夫 Tatsuo Yoshinobu 平野 愛弓 Ayumi Hirano 宮本 浩一郎 Koichiro Miyamoto	TM20069100	Master's Program							Undecided	Undecided	Undecided	Undecided	TBD	Japanese	①	生体応答を理解するための物理化学的基礎について概観するとともに、生体関連物質の検出・定量に用いられる。電気化学的・光学的計測手法等の、さまざまな手法の原理と特徴について講義する。さらに、細胞センサや神経計測、各種バイオチップやMEMS等の最近の研究動向および応用例について紹介する。	Science and Engineering	
24	Engineering	Biphysics and Bioengineering	2	鳥谷部 祥一 Shoichi Toyabe 中村 修一 Shuichi Nakamura	TM20071000	Master's Program							Undecided	Undecided	Undecided	Undecided	TBD	Japanese	①	工学技術による生命現象の観測、計測、制御について、基礎から最先端の内容まで広い知識を得ることを目的とする。特に、遺伝子工学、顕微鏡技術、微小系の制御技術などについて講義する。	Science and Engineering	・特になし
25	Engineering	Urban Planning	2	姥浦 道生 Michio Ubaura	TM70021000	Master's Program							1st Term	Mon.	2	Face-to-face	103	Japanese	①⑤	各種都市計画的課題に対応するための先進事例を調査・プレゼンすることにより、都市の物的環境整備のための計画的制度論的実地把握能力及び改善手法の提案能力を獲得することを目的とするものである。	All fields	・履修人数上限：40名程度 ただし、工学研究科の学生を優先する。
26	Engineering	Architectural IT Communication Design	2	本江 正茂 Masashige Motoe	TM70018000	Master's Program							1st Term	Wed.	3	Undecided	104	Japanese	①	現代における様々なITコミュニケーションデザインについての事例やそれを支える技術について解説し、情報技術によって建築や都市の空間がどのように影響を受け、変化し、その可能性を広げるのかについて論じる。情報と空間とが融合する時代に必要なデザイン能力開発の基礎作りを目的とする。	All fields	
27	Engineering	The World's Architectural Heritage	2	飛谷 潤一郎 Junichiro Higaya	TM70020000	Master's Program							2nd Term	Tue.	4	Online		Japanese	①	建築や都市について教員が毎年何らかのテーマを設定し、ユネスコの世界文化遺産から地元の世界遺産まで事例を広く取り上げて解説する。受講者は、個人またはグループでそれらの事例を選んで発表することにより、学際的な研究能力を獲得することを目的とするものである。講義は日本語で行うが、配布資料は英語も使用する。	Humanities and Social Sciences	・履修人数上限：40名
28	Engineering	Science Communication	2	高橋 信 Makoto Takahashi 狩川 大輔 Daisuke Karikawa	TM80005000	Master's Program							1st Term	Tue.	2	Face-to-face	101	Japanese	⑤	本講義では工学系研究者として知っておくべき技術者倫理の基礎と、科学技術コミュニケーションの基礎を、実践的な講義を通じて学ぶ。	Science and Engineering	・履修人数上限：40名

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29	Engineering	Management Systems	2	永松 陽明 Akira Nagamatsu	TM8000610 0	Master's Program	○	○					1st Term	Intensive course	Intensive course	Online		Japanese	⑤	先端技術を効果的に活用して新規事業を構想し、実施するために必要な技術戦略の構築、経営戦略と技術戦略の統合、事業戦略、事業機会と技術開発マネジメント、技術とマーケティングによる事業創造、戦略的提携、資本戦略、財務戦略、ファイナンス理論、標準化戦略を講義する。また、先端技術を具体的に事業化するための新規事業計画の作成手法、その評価方法について事例に基づいて理解させる。	Science and Engineering	・オンライン講義なので上限なし
30	Engineering	Advanced Management Systems	2	永松 陽明 Akira Nagamatsu	TD8000410 0	Doctoral Program			○	○	○	○	1st Term	Intensive course	Intensive course	Online		Japanese	⑤	本講義では、技術とイノベーションに係る企業のマネジメントにおいて主として技術革新により新製品を生み出す理論についてわが国及び欧米の最新の論文や研究成果等を取り扱う。特に、最近わが国を中心に提唱され世界的に注目されているアーキテクチャー理論や知識創造理論も中心としつつ、Fuzzy Front 理論、標準化戦略リーダー等のプロダクトイノベーションやプロセスイノベーションを生み出すための企業内における組織論についても触れる内容とし、イノベーションに関する理論と実務の融合を目指す講義とする。	Science and Engineering	・オンライン講義なので上限なし
31	Engineering	Value Systems	2	永松 陽明 Akira Nagamatsu	TM8001010 0 TD8000710 0	Master's Program, Doctoral Program	○	○	○	○	○		1st Term	Intensive course	Intensive course	Online		Japanese	⑤	本講義の目的は、イノベーションを実践的・戦略的なレベルで理解するための知識を得ることと、実践するための必要な知見に関する基礎的な内容を理解できるようになることである。わが国では、企業的设计力や技術力が優れているのに、それが利益に結びつかない場合が極めて多い。その一つの理由が、イノベーションのマネジメントに対する取り組みが十分に行なわれてこなかったことが挙げられる。そのために、イノベーションに関する基本的な考え方を十分に、事例を通して体得していく。そして、このような内容を通し、現実に行われている社会活動、企業活動の中の課題を理解し、対応するイノベーションの可能性を思考するための基礎的知識を得る。	Science and Engineering	・オンライン講義なので上限なし
32	Engineering	Project Leadership	2	石田 修一 Shuichi Ishida	TM8000910 0 TD8000610 0	Master's Program, Doctoral Program	○	○	○	○	○		1st Term	Intensive course	Intensive course	Online		Japanese	⑤	将来的に企業経営に参画して行く技術系マネジメント人材の候補者が、上記背景とミッションを十分に理解した上で、戦略的、体系的にイノベーションに基づく経営戦略を理解し、知識をマネージすることで所属企業や団体においてイノベーションを実現するプロジェクト・マネジメントの実践能力を養う。	Science and Engineering	・オンライン講義なので上限なし
33	Engineering	New Business Creation	2	石田 修一 Shuichi Ishida	TM8001110 0 TD1009400 0	Master's Program, Doctoral Program	○	○	○	○	○		1st Term	Intensive course	Intensive course	Online		Japanese	⑤	経営戦略の基本的な概念として、ドメインの定義、コア技術、競争戦略をキーワードとして、新製品開発と新事業開発の戦略に関する国内外の代表的な事例研究を行う。到達目標は、次の2点である。1)新事業開発と社内ベンチャーに関連した組織論と戦略論についての基礎的な概念と理論を習得し、理論用語を用いて検討や議論ができる。2)社内ベンチャーに関連した組織論と戦略論の理論的枠組みを新製品開発や新事業開発の事例分析などの研究に活用できること。	Science and Engineering	・オンライン講義なので上限なし
34	Engineering	Introduction to Management Science and Technology	2	石田 修一 Shuichi Ishida	TM8001230 0	Master's Program	○	○					1st Term	Mon.	5	Online		Japanese	①	工学領域が支えてきた産業を取り巻く状況は移ろい、それとともに大学で工学を修めた者の活躍の場も以前とは大きく異なり、この先も想像が及ばないほどの変動が予想される。そこでこの講義では、幅広い専攻の理系学生が、技術と社会の関係について様々な考え方に触れることを目的としている。具体的には、技術社会システム専攻に関連した教員がオムニバス形式で各々の研究領域に照らしながら、専門領域のみならず社会とのつながりについて講義する。	Science and Engineering	・オンライン講義なので上限なし
35	Engineering	Intellectual Property Strategy	1	石田 修一 Shuichi Ishida	TM2002160 0 TD2000560 0	Master's Program, Doctoral Program	○	○	○	○	○		1st Term	Intensive course	Intensive course	Online		Japanese	⑤	研究開発や産業活動において、知的財産の重要性が高まっており、知的財産を保護するために知的財産権制度の活用が必須となっている。本講義では、基本的な産業財産権を始めとする知的財産権制度の概要及びその活用方法を説明する。加えて、実務的な立場から、知的財産の価値評価、産業財産権のデータ活用及び知的財産権に関する最近の動向についても説明する。	Science and Engineering	・オンライン講義なので上限なし
36	Engineering	Carbon Neutral Fundamentals	2	中田 俊彦 Toshihiko Nakata	TM8001410 0	Master's Program	○	○					1st Term	Wed.	2	Face-to-face	101	Japanese	①	気候変動の解決方策としてのカーボンニュートラルの基礎を、エネルギー需給データ解析、エネルギーシステム設計、再生可能エネルギー技術のイノベーションの観点から習得する。	All fields	・履修人数上限：40名
37	Engineering	Carbon Neutral Applications	2	中田 俊彦 Toshihiko Nakata	TD8001220 0	Doctoral Program			○	○	○		2nd Term	Wed.	5	Face-to-face	101	English	①	気候変動の解決方策としてのカーボンニュートラルの基礎と応用を、エネルギーシステム分析、シナリオモデリング、統合デザインの観点から習得する。	All fields	・履修人数上限：20名
38	Agricultural Science	Global Bioethics	2	石井 圭一 Keiichi Ishii	AM1531	Master's Program	○	○					1st Term	Fri.	3	Hybrid	Large Lecture Room, Aobayama Commons	Japanese	⑤	Considering human being, biological group, the ecosystem, environment surrounding it, agriculture and agricultural science cooperate with the life zone and have a history coexisting. From now on we need to have sound thinking and ethics of agricultural researchers and students as a member of the life sphere in order for us to coexist sustainably in the life sphere. It is the foundation of agricultural sciences. With the rapid development of life sciences in recent years and the seriousness of resource, environment and food problems, think about Biosphere ethics as the foundation of agricultural sciences that is responsible for the protection and restoration of the environment, the contribution to human development and the preservation and use of various organisms.	Science and Engineering	・ It is also an interdisciplinary DIARE courses.

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No.	Courses offered Graduate School	Course Title	Credits	Instructors	Course Code	Curricula	Grade					Terms	Day of the week	Lecture period	Course method	Course method	Language used in courses	Classification ①~⑤	Object and Summary of Class	対象 (主専攻・主専攻・兼専攻)	Note	
							M1	M2	D1	D2	D3											D4
39	Agricultural Science	General Assessment Science of Agricultural Product and Food	2	藤井 智幸 Tomoyuki Fujii	AM1251, AD4003	Master's Program, Doctoral Program	○	○	○	○	○	○	1st Term	Tue.	5	Face-to-face	Lecture Room #3, Aobayama Commons	Japanese	⑤	In Japan, accidents related to food safety and cases related to morals occur frequently, which has become a big problem. With the expansion of international distribution of foods worldwide, it is required to formulate and implement unified safety management regulations. In this lecture, we will explain the knowledge from the basics to the practice regarding the quality and safety of foods, agricultural products and processed products in Japan and their evaluation methods. In addition, the current status and measures for quality and safety management of food, agricultural products and processed products in other countries will be explained. Then, select the topics explained and deepen the discussion among the students.	Science and Engineering	・ It is also an interdisciplinary DIARE courses.
40	International Cultural Studies	Sustainable Development II	2	西宮 宣昭 Noriaki Nishimiya	KM18860	Master's Program	○	○					1st Term	Intensive course	Undecided	Face-to-face	Undecided	English	⑤	This class is introductory to aim at: 1) providing the applied students with basic knowledge of sustainability, sustainable development and SDGs. Those three topics are addressed in the context of development assistance especially focusing on Japan's Official development assistance (ODA). The outline of development assistance is also covered in this class. 2) making the students aware of and familiarizing with: factual situation of the above mentioned three topics in the frontline development assistant projects: What is going on and what is reality about the three topics?	All fields	・ Courses offered every other year ・ English
41	International Cultural Studies	Environmental Public Policy II	2	福嶋 慶三 Fukushima Keizo	KM18870	Master's Program	○	○					1st Term	Intensive course	Undecided	Online	Undecided	Japanese	①⑤	This class aims to provide students with a wide overview of the latest theory and practice of environmental policy in participative and interactive manner.	All fields	・ Courses offered every other year
42	International Cultural Studies	Environmental Education II	2	二ノ宮リム さち Sachi Ninomiya-Lim	KM18890	Master's Program	○	○					1st Term	Intensive course	Undecided	Face-to-face and Online	Undecided	English	①⑤	This course facilitates you to draw answers to this question and develop your own view of the role of environmental education (EE) and education for sustainable development (ESD) in the present world. While the global society is facing the environmental crisis in this era of Anthropocene, EE and ESD play a critical role to ensure a fair and participatory process to transform our world toward sustainability. In this course, we will study the concepts, approaches and contents of EE/ESD to critically consider how EE/ESD can empower people through lectures, student presentations and participatory workshops.	All fields	・ Courses offered every other year ・ Maximum number of students: 30 ・ English
43	International Cultural Studies	Environmental and Resource Economics I	2	佐藤 正弘 Masahiro Sato	KM23110	Master's Program	○	○					2nd Term	Wed.	1	Face-to-face	Undecided	Japanese	①⑤	This course offers a general introduction to the basic theories of environmental economics and resource economics, and provides students with theoretical tools to explore interactions between the Earth system and economic system.	All fields	
44	International Cultural Studies	Environmental and Resource Economics II	2	佐藤 正弘 Masahiro Sato	KM23230	Master's Program	○	○					2nd Term	Wed.	2	Face-to-face	Undecided	English	①⑤	This course offers a general introduction to the basic theories of environmental economics and resource economics, and provides students with theoretical tools to explore interactions between the Earth system and economic system.	All fields	・ English
45	International Cultural Studies	A History of Japanese Religion	2	Klautau Orion	KM25210	Master's Program, Doctoral Program	○	○	○	○	○	○	2nd Term	Fri.	2	Face-to-face	Undecided	Japanese	①⑤	After Perry's "opening" of Japan in 1853 and the Meiji restoration of 1868, Japan's social and political structures were forced to several changes. Buddhism, which was considered by a number of Meiji intellectuals as one of the "ancient evils" symbolizing the former bakufu system, was also changed not only in the institutional sense, but also in terms of ideas. In this course, after discussing the basic stance of discursive history, we will examine this transformation process which lead to the "modernization" of Buddhism.	Humanities and Social Sciences	・ Courses offered every other year
46	International Cultural Studies	Introduction to Language Sciences (English)	2	Zisk Matthew Joseph	KM23330	Master's Program, Doctoral Program	○	○	○	○	○	○	2nd Term	Wed.	3	Face-to-face	Undecided	English	①③	In this course, we will look at the fundamental fields of linguistics such as phonology, morphology, syntax, typology and sociolinguistics, while focusing on the Japanese language as a case study. The goal of this class is for students to gain a basic understanding of the fundamental fields of linguistics and to acquire the skills to solve simple linguistic problems.	Humanities and Social Sciences	While this class is conducted in English, students are free to submit all assignments, including the final exam, in Japanese
47	International Cultural Studies	History of the Japanese Language II	2	Zisk Matthew Joseph	KM13320	Master's Program, Doctoral Program	○	○	○	○	○	○	1st Term	Wed.	3	Face-to-face	Multimedia Education and Research Complex M304	English	①③	In this class, we will study the basics of Classical Japanese grammar by reading an assortment of texts from the various periods of the Japanese language. We will start with a brief overview of Classical Japanese grammar and syntax, after which we will go through each major period of the classical language (Old Japanese, Early Middle Japanese, Late Middle Japanese and Early Modern Japanese) in order, reading excerpts from famous works of literature from each period. The goal of this course is to help students gain the basic skills necessary to read and comprehend Classical Japanese and, at the same time, introduce students to a wide variety of Classical Japanese literature.	Humanities and Social Sciences	・ Courses offered every other year While this class is conducted in English, students are free to submit all assignments, including the final exam, in Japanese

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No.	Courses offered Graduate School	Course Title	Credits	Instructors	Course Code	Curricula	Grade					Terms	Day of the week	Lecture period	Course method	Course method	Language used in courses	Classification ①~⑤	Object and Summary of Class	対象 (日本語・英語・漢語)	Note	
							M1	M2	D1	D2	D3											D4
48	Information Sciences	Algebra and discrete mathematics	2	宗政 昭弘 Akihiro Munemasa	IM20500041	Master's Program	○	○					1st Term	Tue.	2	Hybrid	情報-大206	English	②	In this course, the student will first learn the notation of sets and logical expressions, as it will play the role of the grammar in mathematics. Examples in discrete mathematics and algebra will be given in order to solidify the understanding of the usage. The ability to use the proper notation is necessary not only for learning modern mathematics, but also helpful in writing computer programs, understanding and writing technical documents logically. Discrete mathematics is an excellent subject for the training of logical thinking.日本語を母語とする学生は昨年度の授業録画を視聴可能とする。	All fields	・ It is also an interdisciplinary DIARE courses.
49	Information Sciences	Statistical Modeling	2	荒木 由布子 Yuko Araki	IM20500141	Master's Program	○	○					2nd Term	Mon.	2	Face-to-face	Room 206, Graduate School of Information Sciences	Japanese	②	Statistical modeling is widely used in various fields of natural and social sciences to extract information from data and to solve problems. In this lectures, we will start from the basic theory underlying statistical modeling of phenomena, and then focuses on (1) how to set up flexible models, (2) how to estimate parameters of models, and (3) how to select optimal models in order to efficiently extract information from recent data with complex and diverse structures. □ Background knowledge on elementary probability and statistics are required.	All fields	・ It is also an interdisciplinary DIARE courses.
50	Information Sciences	Systems Bioinformatics	2	木下 賢吾 他 Kengo Kinoshita et al.	IM20500262	Master's Program	○	○					2nd Term	Fri.	3	Online	3rd Floor Small Lecture Room, Graduate School of Information Sciences	Japanese	①	This course provides an introduction to the fundamental concepts of biological information science. We will explore the flow of biological information along the central dogma (DNA → RNA → protein) and the transmission of genetic information from digital (sequence information) to analog (three-dimensional structure information of proteins).□ The course will cover the analysis methods for sequence information at the gene level, including gene structure and promoter analysis. We will also examine the analysis of numerical data through the analysis of gene expression level information at the RNA level. Additionally, we will discuss the handling of three-dimensional structure data, which are important for functional expression, at the protein level. Throughout the course, we will emphasize the role that information science plays in the understanding of biological information and its practical applications, rather than on the algorithms themselves.	All fields	・ It is also an interdisciplinary DIARE courses.
51	Information Sciences	Game Theory for Applied Economics	2	曾 道毅 Dao-Zhi ZENG	IM20330940	Master's Program	○	○					1st Term	Tue.	1	Online	Room 206, Graduate School of Information Sciences	English	②	Game theory studies how several intelligent and rational individuals make their decisions. In this lecture, students will learn noncooperative game theory, which considers the case that different players have conflicting interests and they interact with each other. I will introduce the concepts of matrix game, extensive game, repeated game, Nash equilibrium, Subgame perfect equilibrium, Nash bargaining solution. Some applications in economics will be illustrated for students to deepen understanding of the essence. I use English this year. I also provide my Japanese lecture movies recorded in 2023 for students who expect lectures in Japanese.	All fields	・ It is also an interdisciplinary DIARE courses.
52	Information Sciences	Management of Information Technology	2	渡辺 勝幸 Katsuyuki Watanabe	IM20500271	Master's Program	○	○					1st Term	Mon.	2	Face-to-face	Room 207, Graduate School of Information Sciences	Japanese	④	Entrepreneurial Studies. Students will learn how to build a company and the essence of successful entrepreneurship. The objective is to prepare students for immediate success.	All fields	・ It is also an interdisciplinary DIARE courses.
53	Information Sciences	Cognitive Psychology	2	松宮 一進 Kazumichi Matsumiya 和田 裕一 Yuichi Wada	IM20440600	Master's Program	○	○					2nd Term	Wed.	3	Online	Room 207, Graduate School of Information Sciences	Japanese	①	The aim of this lecture is to introduce you to cognitive science. Cognitive science is a mixture of cognitive psychology, neuroscience, engineering (especially, AI), linguistics and philosophy. Our speciality is psychophysics, cognitive psychology and neuroscience. Therefore, most of the topics will be research works in those fields.	All fields	・ It is also an interdisciplinary DIARE courses.
54	Environmental Studies	Introduction to Environmental Studies	2	李 玉友 Ri Gyokuyu	GM000001	Master's Program	○	○					1st Term	Mon.	3	undecided	Lecture hall, 2F, GSES main building	Japanese	①⑤	This is an introductory lecture about what the environmental studies is and how it is studied. Fourteenlecturers from various fields of study including humanities, social sciences and natural sciences discuss eachtopic of the environmental study from their own viewpoints. This lecture demonstrates the multidisciplinarynature of Environmental Studies. Students learn the basics and necessary knowledge of the study of environmentand know what the new agenda of the environmental studies are.	All fields	・ Japanese ・ Maximum number of students: 110 However, priority will be given to students affiliated with the Graduate School of Environmental Sciences and students affiliated with other graduate schools who wish to take this course as a related subject.