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1. Kyoto University educational goals and degree policy regarding the Program for Leading Graduate Schools

Kyoto University Mission Statement (2001, excerpt)

- Kyoto University will generate world-class knowledge through freedom and autonomy in research that conforms to high ethical standards.
- As a university that comprehends many graduate schools, faculties, research institutes and centers, Kyoto University will strive for diverse development in pure and applied research in the humanities, sciences and technology, while seeking to integrate these various perspectives.
- Within its broad and varied educational structure, Kyoto University will transmit high-quality knowledge and promote independent and interactive learning.
- Kyoto University will educate outstanding and humane researchers and specialists, who will contribute responsibly to the world's human and ecological community
- As a university committed to a broad social engagement, Kyoto University will encourage cooperation with local and national society, and will disseminate knowledge informed by the ideals of freedom and peaceful coexistence.
- As an international institution, Kyoto University will promote foreign academic exchange and thereby strive to contribute to the well-being of the world.

From the application guidelines for the Program for Leading Graduate Schools (2011)

The Program for Leading Graduate Schools aims at mentoring talented students into future leaders, armed with a broad view and creative thinking, active globally in industry, academia and government. In order to do so, the Program for Leading Graduate Schools mobilizes high-level educators and students and the participation of industry, academia and government, support a radical reform of graduate education that develops interdisciplinary world-class 5-year graduate programs, and promotes the development of graduate schools befitting their status of highest educational institution.

(1) Educational goals and objectives for the Program for Leading Graduate Schools

As a high-quality 5-year degree education based on an active dialogue with professors and professionals from the university and outside and an industry-government-academia cooperation, this program is designed to develop internationalized human resources with a global view on different fields of expertise and a creative problem-solving stance, equipped with strong communication skills and comfortable in an international setting, active on a global scale.

(2) Admission Policy

The Program for Leading Graduate Schools of Kyoto University welcomes appropriately qualified students who understand and agree with its core objectives, and are ready to embrace them with a strong motivation.

(3) Curriculum Policy

This 5-year program promotes constructive self-learning through dialogue with various educators and professionals from inside and outside the university, as well as a high-level practical education based on industry-government-academia cooperation. This world-class curriculum aims at fostering human resources able to

- conduct research projects from plan to completion,
- communicate and explain their endeavour to the public,
- organize a research team and lead the way in new research fields at an international level.

Full details of the curriculum policy will be fixed within each program.

(4) Degree Policy

This program requires students to enroll for the number of academic years appropriate for their graduate school, to undergo research training and guidance in line with the curriculum policy of the Program for Leading Graduate Schools within their graduate school, to submit a doctoral thesis within the number of years allotted by their graduate school, and pass all designated qualifications and examinations. Depending on their graduate schools, students may also be required to complete a designated number of credits in order to complete the program.
In order to complete the program, students are expected to acquire the knowledge and aptitudes necessary to gain a global view on different fields of expertise and a creative problem-solving stance, as well as the experience and aptitudes necessary to demonstrate strong communication skills and a career in an international setting.

The first stage (the first two years) of this program requires students to complete the designated courses and meet the credits requirements in line with the curriculum policy of the Program for Leading Graduate Schools within their graduate school, the submission of a Master's thesis (if it is required) and passing of all the corresponding qualifications and examinations, as well as passing the Basic Doctoral Ability Qualification (BDAQ).
In order to pass the BDAQ, students are required to complete the designated courses and credit requirements in line with the program, and to meet all other necessary criteria.
In order to meet the criteria for the BDAQ, students are required to be equipped with basic research skills, such as a specific field of expertise, an extensive knowledge, the ability to plan a research project, and communication skills that include foreign language skills.

For further details regarding the standards for Master and Doctoral thesis, please refer to the degree policy of each graduate school.

2. The Global Survivability Studies Program (GSS)

The Inter-Graduate School Program for Sustainable Development and Survivable Societies aims at developing a new academic discipline of Global Survivability Studies (GSS).
This Program is managed by the Leading Graduate School for Sustainable Development and Survivable Societies (GSS), Center for Educational Program Promotion in Graduate School , Kyoto University.

3. Admission Policy for the Global Survivability Studies Program

The GSS Program intends to cultivate human resources in new emerging interdisciplinary area of "Global Survivability Studies" such as human resources filled with the sense of mission and ethics necessary to overcome crises the human being is facing and to enrich human society and contribute to its well-being and human resources with sound judgment and energy to take actions based on expertise, a wide vision, knowledge and wisdom. This GSS Program requires those students who agree with the goals, have general knowledge and education, have ethical thinking, and have strong will to participate to this program.
The Global Survivability Studies Program aims at the following in terms of educational goals.

(1) Our Educational Goals

Fostering human resources with a broad-based knowledge and a specific expertise, combined with flexible thinking, determination and the ability to take action, ready to lead in every area of society, is one of the missions of the University of Kyoto, and an essential requirement in all areas of society, including industry, government and academia.
The Inter-Graduate School Program for Sustainable Development and Survivable Societies (Global Survivability Studies Program or GSS) is based on the cooperation of 9 graduate schools and 3 research institutes. In close collaboration with the industry world, government agencies, international organizations, national and overseas universities, this program aims at developing an advanced interdisciplinary graduate education focused on the field of safety and security, and at actively fostering the future leaders of our global society.
Today's global society is facing an increasing frequency of hazardous events and social instability, which can be identified as 1) large-scale natural disasters, 2) unexpected human disasters and accidents, 3) regional environmental changes such as environmental degradation and infectious diseases, 4) issues regarding food security. In the Inter-Graduate School Program for Sustainable Development and Survivable Societies, a new interdisciplinary area of "Global Survivability Studies" will address and cover each of these issues (**fig.1**), and will cultivate human resources

1- filled with the sense of mission and ethics necessary to overcome the many crisis the human race is facing, and to enrich human society and contribute to its well-being.
2- equipped with sound judgment and energy, able to implement appropriate measures based on their own specific expertise, and on a wide vision and a broad-based knowledge.

The students who complete the Global Survivability Studies Program (GSS) will be notably:

- Academic leaders active in the field of social / safety system science, as high-level researchers and educators.
- Leaders in the field of international crisis management, active on the global scene, in international organizations.
- Leaders in the industry able to appropriately address disasters, accidents and economic crisis, providing a stable and consistent business management
- Leaders at the local and national level who exercise their leadership in policy making regarding food, resources and energy safety
- Science communicators who convey correct information based on their scientific knowledge, thus limiting public anxiety
- New business leaders who develop new technologies and methodologies in the field of safety and security and start their own business

They will be able to assume leading positions in various areas of our global society and move it in the right direction. This program will welcome able young students who are aiming at such careers, and after providing them with a fruitful **5-year graduate education**, will send them out in the world as capable human resources. The University of Kyoto strongly wish that these students can eventually contribute to a more harmonious global society.
In order to foster such human resources, the Global Survivability Studies Program (GSS) set 10 goals, which program students are required to achieve through program activities.

Table 1- The Global Survivability Studies Program (GSS) Goals (to foster leadership)

GSS Goals	Description
Knowledge of GSS Topics	Knowledge of disciplinary areas associated with global survivability studies.
Interdisciplinarity	An understanding of topics from each relevant discipline and the importance of approaching one's own research from an interdisciplinary point of view.
Project Management	Ability to identify the conditions necessary to execute a project, put the project into action, observe problems associated with the project, identify the problems accurately, present feasible solutions, carry out the project while implementing the solutions, and improve the project and one's self as a result of completing it.
Addressing Real World Problems	Ability to identify and understand real world problems by going out into the field to observe and evaluate the problems first hand. Using one's own expert knowledge to present solutions to aspects of these problems. Other people adopt one's solutions to the problem.
Interpersonal Communication	Ability to communicate with other people in a respectful and considerate manner by using appropriate strategies and media. Effective communication with GSS teachers and staff, external parties associated with GSS activities, and anyone else encountered during work or leisure time. Ability to interact respectfully with those whose ideas are different from one's own.
Appropriate Scientific Communication	Ability to communicate information about one's specialization to the general public beginning with the essentials and using appropriate means of communication. Uses an easy to understand manner that does not lower the level of content.
Multicultural Collaboration	Ability to understand and work successfully with one's own uniqueness. Demonstration of an understanding and appreciation for other cultures. Ability to interact with individuals from other cultures without treating them differently than one's self.
Demonstrating Initiative	Ability to work independently of others in planning and executing projects. Willingness to take initiative and demonstrate creativity in response to different contexts. Ability to thrive in most situations with independence and originality.
Practicing Ethical Behavior	Ability to perceive and consider appropriate responses to ethical issues in one's research area, accompanied by an understanding of the consequences of one's actions, and the ability to make ethical choices. Awareness of privacy considerations, adherence to copyright conventions, and avoidance of plagiarism. Practice of cultural sensitivity when making presentations and communicating in writing.
Toughness and Appealing Personality	Ability to address and resolve problems with toughness and charm. If you are charming enough you can convince each person involved to work for the benefit of all. If you are tough enough you can withstand any challenge and overcome any obstacle.

(2) Qualification Requirements and Selection Method: who, when, how to apply

As written in Diploma Policy, those students who are willing to receive our program degree are required to complete the required number of credits in their respective graduate schools and the required numbers of credits and programs provided by this GSS program. Students who are able to apply to this program are those who have graduated from a Japanese university (4-year undergraduate program), or who have an equivalent qualification, and who are enrolled in any of the graduate schools and departments listed in **Table 2** below (or, as a special case, students enrolled in a Doctorate Program (Third-Year) can apply to this program). Nationality, gender and age are no object. The applicants are examined by their application, intelligibility of this program, desire to learn, and their academic transcript. Upon evaluation, those selected will be registered as program students, and attend the course classes.

Table 2 - Graduate schools and departments involved in the Global Survivability Studies Program (GSS)

Graduate School of Education	All departments (Interdisciplinary Studies in Education)
Graduate School of Economics	All departments (Department of Economics)
Graduate School of Science	Division of Earth and Planetary Sciences
Graduate School of Medicine	Department of Medicine and Medical Science, School of Public Health
Graduate School of Engineering	Department of Civil and Earth Resources Engineering, Department of Urban Management, Department of Environmental Engineering, Department of Architecture and Architectural Engineering, Department of Mechanical engineering and Science
Graduate School of Agriculture	All departments (Division of Agronomy and Horticultural Science, Division of Forest and Biomaterials Science, Division of Applied Life Sciences, Division of Applied Biosciences, Division of Environmental Science and Technology, Division of Natural Resource Economics, Division of Food Science and Biotechnology)
Graduate School of Asian and African Area Studies	All departments (Division of Southeast Asian Area Studies, Division of African Area Studies, Division of Global Area Studies)
Graduate School of Informatics	Department of Social Informatics, Department of Communications and Computer Engineering
Graduate School of Global Environmental Studies	All departments (Doctorate Program in Global Environmental Studies, Doctorate Program in Environmental Management)

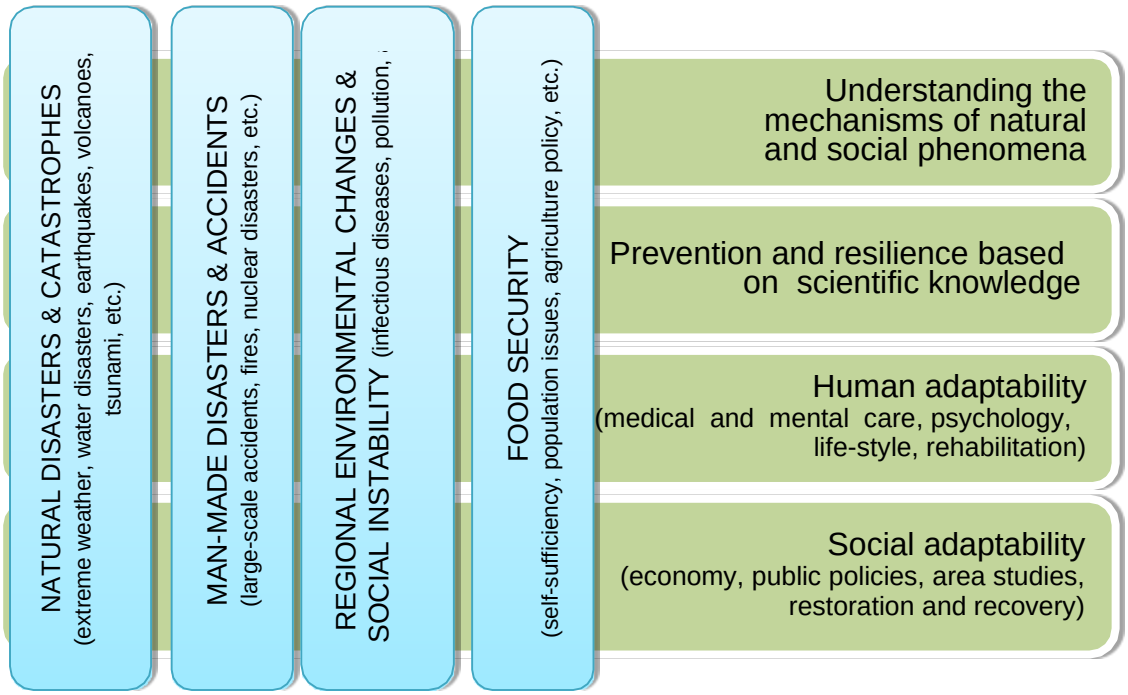

Fig.1 Scope of Global Survivability Studies

4. Global Survivability Studies Program Curriculum

Global survivability Studies Program offers 5-year program aiming to develop a new academic discipline of Global Survivability Studies which is developed to send out capable resources in the world. It is designed to develop internationalized human resources who will contribute to global society and also local society. The students are required to take the curriculum below.

(1) Why a 5-year program?

In order to develop a broad-based knowledge and a specific expertise, to cultivate flexible thinking, determination and the ability to take action, and to get ready to lead in different areas of society, it is indispensable to gain a wide variety of experiences, which, in turn, requires time. Therefore, from the moment they enroll in the first part of the program (Master's Program in some cases), students create their 5-year plan and set their own objectives, and have the opportunity to choose a curriculum that will match their project.

(2) Enrollment procedures for the Global Survivability Studies Program (GSS)

Regarding the curriculum flow for the 5-year Global Survivability Studies Program, please refer to **Table 3**. This program is conducted by the Leading Graduate School for Sustainable Development and Survivable Societies, Center for Educational Program Promotion in Graduate School, Kyoto University.

Table 3 - Global Survivability Science Program (GSS) curriculum flow (enrollment in April)

Academic Year Semester	L1 1st	L1 2nd	L2 1st	L2 2nd*2	L3 1st	L3 2nd	L4 1st	L4 2nd	L5 1st	L5 2nd
Graduate School Degree Program	Course Work		Master Thesis or Doctorate Research Project		Academic Paper Writing, etc.				Doctorate Thesis	
(a) Global Survivability Studies Program classes ◎Compulsory ※ Optional Compulsory ☐Optional		8 Compulsory Classes Credits: ◎Global Survivability Risk Management ◎Agriculture and Environment in Japan ◎Human Safety and Security Studies ◎Global Survivability Studies Earn at least 2 credits before the end of L2 2nd semester *2								
		2 credits from: ※ Information Analysis and Management（Informatics Common Class） ※ Information Analysis and Management Exercise（Informatics Common Class） ※ Clinical Psychology of War and Disaster ※ Engineering Ethics and Management of Technology ※ Risk and Society ※ Interdisciplinary Graduate Courses								
		☐ 4 credits from the classes provided by each graduate school								
(b) Field training		Any available time (Compulsory) *1 ,*2								
(c) Internship		Any available time (Compulsory) *1 ,*2								
(d) Interdisciplinary seminar		Any available time (Compulsory) *1 ,*2								
(e) International academic exchange		Any available time (Compulsory) *1 ,*2								
(f) Industry / University Collaborative Project		Industry-University Collaborative Project (I) (Compulsory) *1 ,*2 Industry-University Collaborative Project (II) (Optional)								
(g) International Cooperation Project		Any available time (Compulsory) *1 ,*2								

Note A: *1 In order to be eligible to take the First Year Pre-Qualifying Examination, students are required to attend at least 3 Interdisciplinary Seminar sessions, and to successfully complete at least 2 compulsory class credits or one GSS activity before the end of their L1 year. Students are required to pass this examination in order to be able to continue the GSS Program (see (4) First Year Pre-Qualifying Examination below).

*2 Students are required to earn at least 2 credits of compulsory classes and complete at least one GSS activity before the end of L2, when they have to pass the Basic Doctoral Ability Qualification, to ensure that they have acquired a comprehensive academic knowledge. In order to enter the second stage of the doctoral program, students are required to pass this evaluation.

(a) Students have to earn all required credits by the end of the 5th year.

(b)～(g)All must be completed by the end of the 5th year.

Note B: Third-Year enrollment students are required to complete all the curriculum by the end of the 3rd year (except part of the curriculum for which they received certification during preparatory course).

Note C: For students who enrolled in fiscal year 2018 or before 2018, the Compulsory class "Global Survivability Risk Management" will be replaced by "Introduction to Risk Studies" and "Agriculture and Environment in Japan" will be replaced by "Sustainable Food Production".

(3) About Academic Degree (Degree Policy)

(a) Research: students are required to pursue their research within their department and graduate school, and will receive their academic degree at the end of the 5 years, if they meet the requirements of their graduate school.

(b) Comprehensive academic knowledge: students are expected to gain a variety of experiences through this program, and to acquire a comprehensive academic knowledge, in order to become active leaders in our global society.

By achieving the two above elements, students in the Inter-Graduate School Program for Sustainable Development and Survivable Societies will be granted the following mention (tentative translation) on their diploma:

Kyoto University hereby confers upon the candidate a Doctorate degree (Ph.D.) in recognition of the completion of the Doctorate Program of the Department of ○○○, Graduate School of ○○○.

OR

Kyoto University hereby confers upon the candidate a Doctorate degree (○○○) in recognition of the completion of the Doctorate Program of the Department of ○○○, Graduate School of ○○○, and certifies that he/she completed 'Inter-Graduate School Program for Sustainable Development and Survivable Societies'.

As seen in **Table 4** below, the name of the degree changes slightly depending on the Graduate School.

Table 4 - Mention on the diploma bestowed after completion of the program (as of April 2020)

Graduate School of Education	Kyoto University hereby confers upon the candidate a Doctorate degree (Education) in recognition of the completion of the Doctorate Program of the Department of ○○○, Graduate School of Education and certifies that he/she completed 'Inter-Graduate School Program for Sustainable Development and Survivable Societies'.
Graduate School of Economics	Kyoto University hereby confers upon the candidate a Doctorate degree (Economics) in recognition of the completion of the Doctorate Program of the Department of Economics, Graduate School of Economics, and certifies that he/she completed 'Inter-Graduate School Program for Sustainable Development and Survivable Societies'.
Graduate School of Science	Kyoto University hereby confers upon the candidate a Doctorate degree (Science) in recognition of the completion of the Doctorate Program of the Division of Earth and Planetary Sciences, Graduate School of Science, and certifies that he/she completed 'Inter-Graduate School Program for Sustainable Development and Survivable Societies'.
Graduate School of Medicine	Kyoto University hereby confers upon the candidate a Doctorate degree (Medicine) in recognition of the completion of the Doctorate Program of the Department of Medicine, Graduate School of Medicine, and certifies that he/she completed 'Inter-Graduate School Program for Sustainable Development and Survivable Societies'. OR Kyoto University hereby confers upon the candidate a Doctorate degree (Public Health) in recognition of the completion of the Doctorate Program of the School of Public Health, Graduate School of Medicine, and certifies that he/she completed 'Inter-Graduate School Program for Sustainable Development and Survivable Societies'.
Graduate School of Engineering	Kyoto University hereby confers upon the candidate a Doctorate degree (Engineering) in recognition of the completion of the Doctorate Program of the Department of ○○○, Graduate School of Engineering, and certifies that he/she completed 'Inter-Graduate School Program for Sustainable Development and Survivable Societies'.
Graduate School of Agriculture	Kyoto University hereby confers upon the candidate a Doctorate degree (Agriculture) in recognition of the completion of the Doctorate Program of the Department of ○○○, Graduate School of Agriculture, and certifies that he/she completed 'Inter-Graduate School Program for Sustainable Development and Survivable Societies'.
Graduate School of Asian and African Area Studies	Kyoto University hereby confers upon the candidate a Doctorate degree (Area Studies) in recognition of the completion of the Doctorate Program of the Department of ○○○, Graduate School of Asian and African Area Studies, and certifies that he/she completed 'Inter-Graduate School Program for Sustainable Development and Survivable Societies'.

Graduate School of Informatics	Kyoto University hereby confers upon the candidate a Doctorate degree (Ph.D.) in recognition of the completion of the Doctorate Program of the Department of ○○○, Graduate School of Informatics. Kyoto University hereby confers upon the candidate a Doctorate degree (Informatics) in recognition of the completion of the Doctorate Program of the Department of ○○○, Graduate School of Informatics, and certifies that he/she completed 'Inter-Graduate School Program for Sustainable Development and Survivable Societies'.
Graduate School of Global Environmental Studies	Kyoto University hereby confers upon the candidate a Doctorate degree (Global Environmental Studies) in recognition of the completion of the Doctorate Program of the Department of ○○○, Graduate School of Global Environmental Studies, and certifies that he/she completed 'Inter-Graduate School Program for Sustainable Development and Survivable Societies'.

(4) First Year Pre-Qualifying Examination

At the end of the 1st year, students are required to take the First Year Pre-Qualifying Examination. Students must to pass this examination in order to be able to continue the GSS Program.

Screening criteria

(a) To take part at least 3 sessions of interdisciplinary seminars and to get certification. Furthermore, earning at least 2 credits of compulsory classes or completing at least one GSS activity.
(b) To submit a-5year (3-year for Third-Year enrollment) research project.
(c) A20-minute oral examination (interview) in English will be held in early March, focused on (a) and (b).

(5) Second Year Qualifying Examination (Basic Doctoral Ability Qualification)

At the end of the first part of the program (the end of the 2nd year), depending on the department and the graduate school they are enrolled in, student may have to submit a Master thesis or an equivalent research work, and may then be granted a Master Degree or equivalent provided they met all the necessary requirements. Depending on their department and graduate school, students may have to submit a preliminary doctorate thesis, which is the equivalent of a Master thesis. In professional degrees, students are required to submit a theme research.
For details on each of the above, please refer to the rules and requirements of each graduate school.
In addition, at the same period, students are evaluated (Basic Doctoral Ability Qualification) to ensure that they have acquired a comprehensive academic knowledge and are required to pass this evaluation.

Screening criteria

(a) To have earned the required number of credits to complete the Master Program in their respective graduate schools (except students in the Graduate School of Medicine).
(b) To have submitted a master thesis or its equivalent and have their academic knowledge deemed sufficient in their respective graduate schools (except students in the Graduate School of Medicine).
(c) To have passed the entrance examination for a doctoral program or its equivalence (except students in the Graduate School of Medicine).
(d) To have earned the required number of credits (including English proficiency) in the GSS Program. (Students are required to earn at least 2 credits of compulsory classes and complete at least one practical curriculum.)
(e) To write a summary of their master thesis or its equivalent in addition to a research plan for the doctoral program in English, and have their academic knowledge deemed sufficient to start a doctoral research (except students in the Graduate School of Medicine).
(f) Students in the Graduate School of Medicine are required to write their research progress and plan in English, and have their academic knowledge deemed sufficient.
(g) Oral examination for evaluation of (e) and (f) will be held at the beginning of March, in which each student will have to make a 10-minute presentation and answer questions for 15 minutes, in English.

(6) Graduation Requirements and Program Timeframe

Students who aspire to graduate from the Global Survivability Studies Program and obtain a diploma such as described in **Table 4**, in parallel with the program and research in their respective graduate school, are required to attend and pass all the categories from (a) to (g).

(a) Global Survivability Studies Program classes

In order to develop a broad-based knowledge and a specific expertise, students are required to attend classes offered by the 9 graduate schools involved in the program. They have to complete 4 compulsory

subjects (8 credits), optional compulsory subjects (2 credits) and optional subjects (4 credits).

(b) Field training

In order to carry out their research project with interdisciplinary/multidisciplinary perspective, students are required to plan and conduct their own field training.

(c) Internship

To cultivate flexible thinking, determination and the ability to take action, students are required to participate in an internship in the industrial sector, a governmental organization, an international organization and a domestic or overseas university.

(d) Interdisciplinary seminar

In order to cultivate a broad vision and to avoid immersing in his/her own discipline, students are required to participate in a variety of seminars covering a wide array of research subjects, and expected to gain insight through discussion.

(e) International academic exchange

Students are required to either participate in an intensive international school along with students from other universities in Japan and abroad, or make presentations in international academic conferences, developing their adaptability and their ability to conduct their own research through lectures, training and discussions.

(f) Industry-University Collaborative Project

Based on their own suggestions, students are required to design a few months project in partnership with the staff member (or a small group) of a company, and to conduct this project with this partner. Students are expected to find a partner ready to follow their ideas, to take the lead in conducting their project, and thus develop the ability to carry their project through. The process of getting to know a company and getting them to know you also provides the students with the opportunity to create a career path. Students are recommended to implement several Industry-University Collaborative Projects.

(g) International Cooperation Project

Based on their own suggestions, students are required to plan a bilateral (or multilateral) research project or event, in partnership with an overseas collaborative organization (university, research institute, company), NPO, NGO, or an individual (a student from a foreign university for example), thus developing the ability to carry a project through in an international setting.

(7) ePortfolio (GSSfolio system)

The GSSfolio is a tool for GSS students to compile accurate records of their learning results. Every student must provide continuous updates to his/her academic adviser and other faculty members. The content of the GSSfolio is used in part of the assessment of the students.

Table 5 – Curriculum map

GSS Goals	Coursework	Field training	Internship	Interdisciplinary seminars	International academic exchange	Industry–Universirty Collaborative Project	International Cooperation
Knowledge of GSS Topics	◎			○	○		
Interdisciplinarity	◎			◎			
Project Management						◎	◎
Addressing Real World Problems		◎	○			○	○
Interpersonal Communication		○	○			○	○
Appropriate Scientific Communication					◎	○	
Multicultural Collaboration			◎				○
Demonstrating Initiative						◎	◎

Practicing Ethical Behavior		○	○			○	○
Toughness and Appealing Personality	○	○	○	○	○	○	○

◎: Goal required to complete the activity

○: Goal recommended to complete the activity

(8) Homeroom

The program students are required to attend GSS homeroom during L1. While exempt from credits, the GSS homeroom is compulsory for all program students. The GSS homeroom is held by GSS mentors about once a month and attendance is taken into account in the selection process of qualification, etc. In addition, about the students after L1, it is left to each student to participate the GSS homeroom when there is no special designation. But participation may be recommended depending on the contents of the GSS homeroom.

(9) Final Screening and Certification

At the final stage of the GSS Program, a final screening will be held to determine whether both research for academic degree and comprehensive academic knowledge required in the GSS Program have been positively achieved. All GSS students must pass this screening in order to be certified as having successfully completed the program.

Screening Criteria

Examinees are GSS program students who fulfill, or are anticipated to fulfill, the following requirements.

(a) Students who submitted a Petition for Doctoral Dissertation Review.

(b) Students who have completed the following curriculum, as established in the GSS course guideline, by the time they earn their doctoral degree.

  a. Global Survivability Studies Program classes

  b. Field training

  c. Internship

  d. Interdisciplinary seminar

  e. International academic exchange (Former International School)

  f. Industry-University Collaborative Project

  g. International Cooperation Project

(c) Students who have admitted to attain GSS values of a global leader (10 leadership goals), as established in the GSS course guideline, by the time they earn their doctoral degree.

(d) Students whose issues and activities from the perspective of Global Survivability Studies contribute excellently to their doctoral dissertation. (Students must write clearly about the relationship between the GSS Program and arguments, methods, analysis etc. in their own doctoral dissertation in the summaries).

(e) Students who recorded evidence of (b) and (c) in the GSSfolio.

(f) The GSS Program final screening committee, which is formed for each candidate, shall investigate whether the candidate satisfy the above criteria (b) (c) and (d).

(g) For above investigation, the candidate shall make a presentation in English at the final screening and certification meeting based on his/her summaries of Doctoral Dissertation and Relationship between GSS Program Activities and Doctoral Dissertation.

5. Curriculum Categories

(a) Global Survivability Studies Program classes (Table 6)

Compulsory classes (4 classes, 8 credits) : The 4 classes below are compulsory for all students involved in the program, and are designed to provide a common set of knowledge in Global Survivability Studies.

- Global Survivability Risk Management（2 credits, Graduate School of Advanced Integrated Studies in Human Survivability (GSAIS), 2nd semester）
- Agriculture and Environment in Japan（2 credits, Graduate School of Agriculture, 1st semester）
- Human Safety and Security Studies (2 credits, Graduate School of Education, 2nd semester）
- Global Survivability Studies（2 credits, Graduate School of Engineering, 1st semester）

Note: For students who enrolled in fiscal year 2018 or before 2018, the Compulsory class “Global Survivability Risk Management” will be replaced by “Introduction to Risk Studies” and “Agriculture and Environment in Japan” will be replaced by “Sustainable Food Production”.

Optional Compulsory classes (2 credits) : Students are required to choose classes (corresponding to at least 2 credits) among the followings.

- Information Analysis and Management (2 credits, Informatics Common Classes, Graduate School of Informatics, 1st and 2nd semesters)
- Information Analysis and Management Exercise (1 credits, Informatics Common Classes, Graduate School of Informatics, 1st and 2nd semesters)
- Clinical Psychology of War and Disaster（2 credits, Graduate School of Education, 1st semester）
- Engineering Ethics and Management of Technology (2 credits, Graduate School of Engineering, 1st semester)
- Risk and Society (2 credits, Graduate School of Asian and African Area Studies, 1st semester)
- Interdisciplinary Graduate Courses (not including GSS compulsory classes)

Please refer to URL : http://www.z.k.kyoto-u.ac.jp/for-internal/daigakuin

Optional classes (4 credits) : The graduate schools and departments involved in the program recommend various classes for the Global Survivability Studies Program in the field of safety and security in **Table 6**. Students are required to complete at least 4 credits from this category.

It should be noted that students have to submit an “auditing student application form” to their own graduate school during the prescribed period, when they wish to attend classes offered by other graduate schools. To know if their graduate school admits the credits they earn in the GSS Program, students need to refer to the requirements of their respective graduate school (see **Table 8** on page 20).

(b) Field training

Students are required to take part in one of the field trainings below and to get approval after assessment from the curriculum committee. Before conducting their training, students need to submit their research activity plan in the GSSfolio to their academic supervisor and GSS mentor(s) and receive their permission.

- Overseas Field Training : Students take part in a field training (observation, experiments, research, etc.) of at least one week abroad.
- Domestic Field Training : Students take part in a field training (observation, experiments, research, etc.) of at least one week in Japan.

(c) Internship

Students are required to take part in one of the internships below and to get approval with assessment from curriculum committee. Before conducting their internship, students need to submit their research activity plan in the GSSfolio to their academic supervisor and GSS mentor(s) and receive their permission.

- Overseas Internship : Students take part in an internship of at least one week in a research institute or a company overseas.
- Domestic Internship : Students take part in an internship of at least one week in a research institute or a company in Japan.

(d) Interdisciplinary seminar

Students are required to take part in 15 sessions of interdisciplinary seminars and to get certification. 4 sessions out of 15 should be leadership development workshop sessions.

(e) International academic exchange

Students are required to either take part in one of the international schools (about a week) below and to get certification upon assessment by the curriculum committee, or make presentations as the first author of the paper at different international conferences or international academic meeting. Before attending the school or making a presentation, students need to submit their research activity plan in the GSSfolio to their academic supervisor and GSS mentor(s) and receive their permission.

- Nagoya University・Kyoto University UNESCO IHP International Hydrological Program
- United Nations University・Kyoto University Training Course
- Domestic Training Course or School held occasionally in Japan
- International Training Course or School held occasionally overseas

(f) Industry-University Collaborative Project

Students are required to conduct one of the collaborative projects below and to get certification upon assessment by the curriculum committee. Before conducting the project, students need to submit their research activity plan in the GSSfolio to their academic supervisor and GSS mentor(s) and receive their permission.

- Industry-university collaborative project Ⅰ (Compulsory)
- Industry-university collaborative project II (Optional)

(g) International Cooperation Project

Students are required to conduct the project below and to get certification upon assessment by the curriculum committee. Before conducting the project, students need to submit their research activity plan in the GSSfolio to their academic supervisor and GSS mentor(s) and receive their permission.

- International Cooperation Project

6. Requirements for Completion

As indicated in **Table 7** below, each graduate school requires a certain number of credits in order to complete their Master and Doctorate programs. Regarding the special classes offered by the Global Survivability Studies

Program and the classes provided by each graduate school, students need to refer to the requirements of their graduate school to know how many of which they can take (see **Table 8** below).

Table 7 - Graduation requirements for the graduate schools and departments involved in the Inter-Graduate School Program for Sustainable Development and Survivable Societies (as of 2020)

Graduate School	**Department or Division**	**Master Program** Required Credits	**Doctorate Program** Required Credits	**Remarks**
Education	Department of Education	30 credits Master thesis	Doctoral thesis	Doctorate: Course of Educational Training of Clinical Supervision, specialized educational training course only At least 20 credits
	Department of Clinical Education			
	Interdisciplinary Studies in Education Division			
Economics	Department of Economics	30 credits Master thesis	Doctoral thesis	
Science	Division of Earth and Planetary Sciences	30 credits Master thesis	Doctoral thesis	
Medicine	Department of Medicine and Medical Science	30 credits・Doctoral thesis		4-year course
	School of Public Health	30 credits	6, 13 or 19 credits Doctoral thesis	Doctorate Program: medical (13 credits), non-medical (19) and professional (6) degree
Engineering	Civil and Earth Resources Engineering	30 credits Master thesis	10 credits Doctoral thesis	
	Urban Management			
	Environmental Engineering			
	Architecture and Architectural Engineering			
	Mechanical engineering and Science			
Agriculture	Agronomy and Horticultural Science	30 credits Master thesis	Doctoral thesis	
	Forest and Biomaterials Science			
	Applied Life Sciences			
	Applied Biosciences			
	Environmental Science and Technology			
	Natural Resource Economics			
	Food Science and Biotechnology			
Asian and African Area Studies	Southeast Asian Area Studies	40 credits Preliminary doctoral thesis Doctoral thesis		5-year course
	African Area Studies			
	Global Area Studies			
Informatics	Social Informatics	30 credits Master thesis	6 credits Doctoral thesis	
	Communications and Computer Engineering			
Global Environmental Studies	Doctorate Program in Global Environmental Studies		6 credits Doctoral thesis	
	Doctorate Program in Environmental Management	30 credits Master thesis	14 credits Doctoral thesis	10 credits each for internship, Master, Doctorate

Table 8 - Credit requirements for each graduate school involved in the Global Survivability Studies Program

Graduate School of Education	As a rule, special classes offered by the Inter-Graduate School Program for Sustainable Development and Survivable Societies and classes provided by other graduate schools cannot be used as credits for degree completion in the Departments of Education of Clinical Education. However, if students register in advance for a class and receive authorization for it, it may then be used credits for degree completion.
Graduate School of Economics	Within their credit requirements, students registered in the Inter-Graduate School Program for Sustainable Development and Survivable Societies can select a maximum of 6 credits from the special lectures offered by this program.
Graduate School of Science	According to the Master Program graduation requirements of the Division of Earth and Planetary Sciences, special classes offered by the Inter-Graduate School Program for Sustainable Development and Survivable Societies, classes provided by other departments and graduate schools, as well as the Faculty of Science common classes can be used as credits for degree completion, up to a total of 4 credits. However, in order to be able to use these credits, students have to ask their academic supervisor within 2 months after the start of each semester, and obtain an authorization from the department faculty board.
Graduate School of Medicine	Special classes offered by the Inter-Graduate School Program for Sustainable Development and Survivable Societies, as well as classes provided by each graduate school cannot be used to complete the credit requirements imposed by the Department of Medicine and Medical Science and the School of Public Health.
Graduate School of Engineering	Students have to complete the number of credits required for each class type (from the list of classes provided in the graduation handbook of each department), and the total number of credits required for graduation. However, classes of the Graduate School of Engineering that are not in the list, as well as classes approved for credits in other graduate schools, and classes approved by the director of the department upon student's request can all be used as credits for degree completion. Details vary depending on the department.
Graduate School of Agriculture	Classes offered by the Inter-Graduate School Program for Sustainable Development and Survivable Societies can be used as credits for master degree completion upon approval of the Graduate School faculty meeting. Please note that the procedures and requirements differ depending on the departments, and students need to inquire the details in advance.
Graduate School of Asian and African Area Studies	Credits from classes offered by the Inter-Graduate School Program for Sustainable Development and Survivable Societies and classes provided by other graduates schools can be used as credits for degree completion, up to a total of 10 credits, provided that students submit auditing student applications to the curriculum office by the deadline, if they attend the classes offered by other graduate schools. In the case of Third-Year enrollment students, they need 10 credits certified by their own graduate school.
Graduate School of Informatics	Upon approval of their academic supervisor, students of the Department of Social Informatics who registered for the Leading Graduate School Program can use classes offered by this program as credits for degree completion, up to a total of 10 credits. In the Department of Communications and Computer Engineering, classes offered by the Inter-Graduate School Program for Sustainable Development and Survivable Societies can only be used as surplus credits (not valid as credit for degree completion), unless students obtain approval beforehand.
Graduate School of Global Environmental Studies	In the Master Program, classes from other graduate schools can be uses as credits for degree completion, up to a total of 4 credits.

7. Academic Supervisors・GSS Secondary Academic Supervisors・GSS Mentors

In this Program, each student is assigned academic supervisors (main supervisor and secondary supervisor) affiliated to the graduate school the student is enrolled in. Moreover, in order to receive appropriate guidance regarding the GSS Program, they are also assigned a GSS secondary academic supervisor from another graduate school as well as GSS mentors.
Main and GSS secondary academic supervisors must be faculty members affiliated with the program.
Details of faculty members are determined by the Leading Graduate School for Sustainable Development and Survivable Societies, Center for Educational Program Promotion in Graduate School , Kyoto University.

(1) Academic Supervisors

The program students are required to register their academic supervisors (secondary supervisors as well if applicable) to the GSS office. Students need to participate in the program upon consultation with and approval from their academic supervisors. Any changes of their academic supervisors need to be reported to the GSS office. In the case that their academic supervisors are not "program faculty members", they will be registered as "program cooperators" until their students complete the program.

(2) GSS Secondary Academic Supervisors

Program students are required to choose and register one Kyoto University tenured faculty member who belongs to a different graduate school from their own (faculty members who have additional positions in their own graduate school, cannot be candidates), as their GSS secondary academic supervisor. They need to decide their GSS secondary academic supervisor after an interview with him/her. They are also required to report any changes of GSS secondary academic supervisor to the GSS office. In the case that the person they chose is not a "program faculty member", he/she will be registered as "program cooperators" until their students complete the program.

(3) GSS Mentors

Program students are assigned GSS mentors in order to receive appropriate guidance regarding the GSS Program. Students carry out the GSS curriculum in constant contact with them. One program student is assigned one or two GSS mentors. The details are announced at the beginning of the semester.

8. Syllabi

The syllabi of curriculum categories (a) to (g) can be found in the following pages.
(a) Compulsory classes, Compulsory Optional classes and Optional classes
1) The information contained in the following syllabi is as of March 2020 and replicates the formats used by each graduate school.
2) Due to change in staff and/or in curriculum content, the information in the following syllabi may be subject to change. Students can take changed and added classes if they are listed in the syllabi of the upcoming year.
3) Students are required to register for each class, and also need an additional registration form for classes taken outside their graduate school.

(a) グローバル生存学大学院科目群

Global Survivability Studies Program Classes

必修科目・選択必修科目

Compulsory classes /Optional Compulsory classes

【注】選択科目についてはKULASISで確認してください。

工学研究科については下記URLからも確認できます。

【NOTE】Syllabus of **Optional classes** are found in KULASIS.

Syllabus of Optional classes offered by Graduate School of Engineering are also found in below URL.

http://www.t.kyoto-u.ac.jp/syllabus-gs/

(b) フィールド実習

Field training

(c) インターンシップ研修

Internship

(d) 学際ゼミナール

Interdisciplinary Seminar

(e) 国際学術交流

International Academic Exchange

(f) 産学連携プロジェクト

Industry-university Collaborative Project

(g) 国際共同プロジェクト

International Cooperation Project

Category	(a) Global Survivability Studies Program classes/グローバル生存学大学院科目群

Outline and objectives

In order to develop a broad-based knowledge and a specific expertise, students are required to attend classes offered by the 9 graduate schools involved in the program. They have to complete 4 compulsory subjects (8 credits), optional compulsory subjects (2 credits) and optional subjects (4 credits).

安全安心分野における幅広い知識と深い専門性を涵養するために、9 つの研究科から提供される講義を受講する。科目群より 4 科目 8 単位の必修科目と、2 単位の選択科目、4 単位の選択科目を修める。

Plan and content

Compulsory classes (4 classes, 8 credits) : The 4 classes below are compulsory for all students involved in the program, and are designed to provide a common set of knowledge in Global Survivability Studies.

- Global Survivability Risk Management （2 credits, Graduate School of Advanced Integrated Studies in Human Survivability）
- Agriculture and Environment in Japan（2 credits, Graduate School of Agriculture）
- Human Safety and Security Studies（2 credits, Graduate School of Education）
- Global Survivability Studies（2 credits, Graduate School of Engineering,）

必修科目 （4 科目 8 単位）:グローバル生存学において修めるべき共通的な知識や恵をぶ。
○地球生存リスク特論(2 単位):総合生存学館開講
○日本の農業と環境(2 単位):農学研究科開講
○安全安心文化学(2 単位):教育学研究科開講
○グローバル生存学(2 単位):工学研究科開講

Optional Compulsory classes (2 credits) : Students are required to choose classes (corresponding to at least 2 credits) among the following.

- Information Analysis and Management (2 credits, Informatics Common Classes, Graduate School of Informatics)
- Information Analysis and Management Exercise (1 credit, Informatics Common Classes, Graduate School of Informatics)
- Clinical Psychology of War and Disaster（2 credits, Graduate School of Education）
- Engineering Ethics and Management of Technology (2 credits, Graduate School of Engineering)
- Risk and Sciety (2 credits, Graduate School of Asian and African Area Studies)
- Graduate School Common classes and Cross-Graduate School classes

Please refer to URL http://z.k.kyoto-u.ac.jp/for-internal/daigakuin

選択必修科目(2 単位):以下の科目のうちから興味のある科目を選択し、2 単位以上修得すること。

○ 情報分析・管理論(2 単位、情報系共通科目、情報学研究科)
○情報分析・管理演習(1 単位、情報系共通科目、情報学研究科)
○戦争・災害の心理臨床(2 単位、 教育学研究科)
○技術者倫理と技術経営 (2 単位、工学研究科)
○ リスク共生相関論(2 単位、アジア・アフリカ地域研究研究科)
○大学院横断教育科目群

大学院横断教育科目群については、URL http://www.z.k.kyoto-u.ac.jp/for-internal/daigakuinで確認すること。

Optional classes (4 credits) : The graduate schools and departments involved in the program recommend various classes for the Global Survivability Studies Program in the field of safety and security (Table 6). Students are required to complete at least 4 credits from this category.

選択科目（4単位）：表6に示した研究科・専攻から、安全安心分野のグローバル生存学大学院連携 プログラムにおいて履修が推奨される科目群のなかから 4 単位以上修得すること。

Requirements

Method and criteria of assessment

Please refer to the syllabus of each class.

各講義のシラバスに準ずる。

Textbooks

Books for reference

Remarks

Students are required to submit auditing registration form to their own graduate school before they take classes offered by other graduate schools.

所属研究科以外の講義を受講する場合は、所属研究科事務室を通じて「聴講願」を提出すること。

必修科目

3029000 Compulsory

科目ナンバリング	G-GAIS00 53029 LB14　G-GAIS00 53029 LB16　G-GAIS00 53029 LB77

授業科目名 <英訳>	地球生存リスク特論 Global Survivability Risk Management	担当者所属・職名・氏名	総合生存学館 教授　山敷　庸亮 総合生存学館 教授　寶　馨 防災研究所　教授　Cruz Ana Maria 総合生存学館 特定助教 水本　憲治 白眉センター 特定助教 KAMRANZAD, Bahareh

配当学年	1-3回生	単位数	2	開講年度・開講期	2021・後期	曜時限	水3	授業形態	講義	使用言語	日本語及び英語

[授業の概要・目的]

(授業概要)本講義は地球規模の環境リスクにより、地球上に生活する我々人類を含めての様々な生物がさらされる生存リスクを評価し、それぞれのリスクの相対比較、想定規模と、発生確率および社会的影響について評価するものである。特に、地球温暖化によるリスク評価と、地球史における絶滅リスク(隕石衝突・火山噴火)、また現代社会において新たに想定される人類の生存に関わるリスクについて様々な角度から評価することを目標とする。

[到達目標]

（学習目標）地球生態システムに関する理解を深め、人間の(Anthropogenic)活動と、自然の(Natural)応答との相 互連環について、現在存在する理想的な形態について学び、そのバランスの重要性について理解を する。現代において顕著となった文明に伴う新たなリスクの種類と想定される被害メカニズムを理 解し、適切なリスク評価を行うことのできる知識の獲得を目指す。 特に地球温暖化に伴う想定被害のリスク評価と、破局的シナリオによって想定される様々な極端被 害、また原子力発電所や放射性廃棄物などによる環境災害リスクについて理解し、現代に生きる我 々が未来の地球を保全してゆくために必要となる知識想定について学ぶ。

[授業計画と内容]

【第1回】10/06 山敷 1.: 地球に対する人間活動(Anthropogenic)と自然活動(Natural)について学ぶ。
(Introduction of the difference between "anthropogenic" and "natural" impacts on Earth systems.)
【第2回】10/13 寶 1.: リスクの様々な定義と概念を学ぶ。
(Introduction to Risk Studies)
【第3回】10/20 寶 2.: 災害リスクとその軽減について仙台防災枠組と関連付けて学ぶ。
(Disaster Risk: How can we reduce it? Sendai Framework for Disaster Risk Reduction)
【第4回】10/27 山敷 2.: 自然(Nature)とは 地球における人間活動(Anthropogenic) の影響について概念を学ぶ。
(Learn the concept of "anthropogenic" and "natural" impacts on Earth systems.)
【第5回】11/10 山敷 3.: 森・流域における森林の機能について学ぶ。
(Learn the function of a forest in an integrated river basin system.)
【第6回】11/17 山敷 4.: 大気圏(Atmosphere)の役割について、主に対流圏(troposphere)、成層圏(stratosphere)を比較
しながら学ぶ。
(Learn the roll of an atmospheric system on Earth systems, focusing mainly on the comparative study of the troposphere and stratosphere.)
【第7回】11/24 山敷 5.: 大陸と海洋と、その相互作用(Continental-Oceanic Mutual Interaction)について学ぶ。
(Learn the concept of Continental-Oceanic Mutual Interaction.)
【第8回】12/1 Kamranzad 1.: 海面上昇によるリスクとその海岸・海浜保全への影響

地球生存リスク特論(2)へ続く↓↓↓

必修科目

Compulsory

地球生存リスク特論(2)

(Risk associated with sea-level rise and its impact on coast and shore protection)
【第9回】12/8 Kamranzad 2.: **気候変動シナリオに関連するリスクとその海洋波浪気候予測への影響**
(Risk associated with uncertainties in climate change scenarios and its impact on ocean wave climate prediction)
【第10回】12/15 **山敷** 6.: **複合災害(原子力災害を例に)のリスクについて学ぶ。**
(Evaluation of Complex disaster induced by human activities, by introducing nuclear disaster)
【第11回】12/22 **寶** 3.: **近年の世界の水災害リスク**
(Recent Water-Related Disaster Events)
【第12回】01/05 **水本** 1.: **グローバル感染症である新型インフルエンザへのリスクに対する日本の対策を学ぶ。** (Learn about pandemic influenza preparedness and response of the Japanese Government.)
【第13回】01/12 **水本** 2.: **エボラ出血熱を例に、新興・再興感染症のリスクについて学ぶ。**
(Learn about emerging/re-emerging infectious disease focusing on Ebola Haemorrhagic Fever.)
【第14回】01/19 Cruz Ana Maria 1.:
natural hazard triggered technological accidents (known as Natechs)
(Learn about risk management of Natechs through a discussion exercise.#160)
【第15回】 01/26 **山敷** 7.: **地球温暖化の影響について学び、いくつかの破局的シナリオ(メタンハイドレートの大量放出**
による超温暖化など)について学ぶ。
(Learn about the issue of global warming and its possible catastrophic scenarios (such as the release of methane hydrate from the ocean floor).

[履修要件]

特になし

[成績評価の方法・観点]

講義毎の小レポートと期末レポート

[教科書]

川井秀一、藤田正勝、池田裕一(編) 『総合生存学 グローバルリーダーのために』（京都大学 学術出版会）
印刷資料を配布する

[参考書等]

（参考書）
環境の汚染とヒトの健康―健康のリスクをどう防ぐ 森澤 眞輔
環境学原論;人類の生き方を問う;脇山・平塚編

[授業外学修（予習・復習）等]

様々な災害や環境破壊のトピックスについて調べておく

（その他（オフィスアワー等））

リスクを見極め、地球とともに生存可能な文明を模索できる人材にならんことを 心より願う。
山敷　庸亮　yamashiki.yosuke.3u@kyoto-u.ac.jp

地球生存リスク特論(3)へ続く↓↓↓

必修科目

Compulsory

地球生存リスク特論(3)

※オフィスアワーの詳細については、KULASISで確認してください。

必修科目

Z002

Compulsory

科目ナンバリング	G-AGR00 8Z002 LE85											
授業科目名 <英訳>	日本の農業と環境 Agriculture and Environment in Japan					担当者所属・職名・氏名	農学研究科　准教授　三宅　武 地球環境学舎 准教授　真常　仁志 農学研究科　准教授　片山　礼子					
配当学年	1回生以上	単位数	2	開講年度・開講期	2021・前期	曜時限	木2	授業形態	講義	使用言語	英語	

[授業の概要・目的]

修士課程の留学生を対象に開講する．日本の自然環境，農業の立地条件，農業技術，環境保全などの観点から日本の農業の現状と特色を講述する．そして，日本と他国の農業との比較を行う．

Lectures on some aspects of agro-ecological background, agricultural technologies and environment conservation in Japan. Comparison of agriculture in Japan and other countries.

[到達目標]

日本の農業と環境の現状と特色を理解し，出身国の農業と環境をより深く理解すること．

Understanding some aspects of agriculture and environment conservation in Japan, and in a student's mother country.

[授業計画と内容]

以下のような課題について，授業を行う予定である．

Following issue will be discussed in this lecture:

１. Soils in the world and Japan (Shinjo)

農業生産を支える土壌の種類、生成過程、特徴について世界と日本のレベルで解説する．

２. Brief Description on Agriculture in Japan（Shinjo）

日本の農業の特徴を概観する

３. Nitrogen balance in Japan（Shinjo）

作物生育にとって必須である窒素の収支について、土壌、農地、国内、世界のレベルで解説する．

４. Phosphorus balance in Japan（Shinjo）

作物生育にとって必須でありかつ有限資源であるリンの収支について、土壌、農地、国内、世界のレベルで解説する．

５. Historical perspective on fruit production in Japan (Katayama)

日本における果樹生産の歴史について概説する.

６. Characteristics of fruit trees and breeding (Katayama)

木本性の園芸作物である果樹の特徴とその育種方法について概説する.

７. Citrus cultivation and production (Katayama)

日本におけるカンキツの栽培と生産について解説する．

８. Grape cultivation and production (Katayama)

日本におけるブドウの栽培と生産について解説する．

９. Globe, universe and life (Miyake)

地球という環境の中での生命活動について俯瞰的に考える．

１０. Animal breeding for Japanese beef cattle (Miyake)

日本の代表的な肉用牛である和牛についての育種改良の歴史や具体的な育種方法論について解説する．

１１,１２． New technology on animal science (Miyake)

畜産学における新たな技術（雌雄産み分け，体細胞クローン）について概説する．

１３,１４． Presentation by students

１５． Feedback

日本の農業と環境(2)へ続く↓↓↓

必修科目

Compulsory

日本の農業と環境(2)

[履修要件]

特になし

[成績評価の方法・観点]

積極的な姿勢および出身国の農業と環境についての発表により総合的に評価する.
発表（70%） 平常点評価（30%）
Evaluation: active attendance (30%), and the presentation (70%) on agriculture and environment in a student's mother country.
評価基準及び達成度については、当該年度農学研究科学修要覧記載の［評価基準及び達成度］による.
Refer to current year's 'Guide to Degree Programs' for attainment levels of evaluation.

[教科書]

使用しない

[参考書等]

（参考書）
授業中に紹介する

[授業外学修（予習・復習）等]

出身国の農業と環境について発表するための準備を行うこと.
Preparation for the presentation on agriculture and environment in a student's mother country.

（その他（オフィスアワー等））

本講義は英語で行なわれる.
This lecture is given in English.

※オフィスアワーの詳細については、KULASISで確認してください。

8940000

授業科目名 <英訳>	安全安心文化学 Human Safety and Security Studies	担当者所属・ 職名・氏名	非常勤講師 工藤 晋平 防災研究所 講師 LAHOURNAT, Florence

配当学年	院	単位数	2	開講年度・開講期	2021・不開講	曜時限	集中	授業形態	特論	使用言語	英語

共用科目		

[授業の概要・目的]

Disaster, whichever natural or human-made, is a crisis and challenge for human beings. It requires individual, communal, social, and national knowledge and action and their integration for us to deal with the situation. Through lectures and discussion, this course aims at to learn how human activities, social and individual specifically culstural and psychological aspects, relate to build, maintain, and recover safety and security in disaster.

【研究科横断型教育の概要・目的】

Disaster in real world requires us to work with victimes/survivors, authorities in local and/or national goverments, and NPO, NGO, etc. combining and integrating knowledge and experiences. As such human safety and security issue is interdisciplinary one as well as shared by many academic fields. Solution of real world problem also needs wide perspective and creativity. To make this course interdisciplinary it is held in a form of semi-intensive lecture, adjusting schedule according to participants.

[到達目標]

Exploring different aspects of the relationship between safety & security/disaster and mind
Understanding the response of human mind under strong stress and the intervention to it
Knowing the way relational factors affect positively/negatively on building safety and security
Exploring different aspects of the relationship between safety & security/disaster and culture
Getting a grasp of the role of culture in security and safety/disaster-related issues
Understanding the meaning and implications of culture differences and cultural competence

[授業計画と内容]

#1 Introduction session
#2 Trauma and related disturbances
#3 Safety and security of mind
#4 Psychological assessment
#5 Psychological support after disaster
#6-7 Students group work/presentations
#8 Exploring “culture”: understanding the mechanisms of culture towards cultural competence
#9 Disaster as a multidimensional social process and its interrelation with culture
#10 The dynamics of social capital and resilience
#11 Culture as an asset for community building
#12-13 Students group work/presentations
#14 Summary

The schedule shown above is tentative and subjected to be changed. Especially, when participating students will do research in fields, they can have opportunity to take part in decision making of whole schedule through communication. For example, in 2017 two sessions was held in one day for total 7 weeks, to make rooms for students to go abroad.

安全安心文化学(2)へ続く↓↓↓

安全安心文化学(2)

[履修要件]

特になし

[成績評価の方法・観点及び達成度]

Students are expected to actively participate in each session, through active engagement and discussion (individually and/or in groups).
Evaluation will be based on:
- Engagement and participation
- Discussion, individually or in groups
- Presentation

Results from the first part of the class (held by Professor Kudo) will be cumulated with those for the second part of the class (held by Professor Lahournat). Your final grade for the class will consist of the cumulation of these results.
If you cannot attend a session, be sure to contact the professor in charge in advance, explaining the exact reason of your absence.

[教科書]

授業中に指示する

[参考書等]

（参考書）
授業中に紹介する

[授業外学習（予習・復習）等]

Students will be required to do readings and preparing for individual presentation and group desicussion

（その他（オフィスアワー等））

オフィスアワー実施の有無は、KULASIS**で確認してください。**

※オフィスアワーの詳細については、KULASIS**で確認してください。**

Compulsory

10F113

提供形態	工学研究科(リーディング大学院科目)						
授業科目名 (英訳)	グローバル生存学 (Sustainability Science for Global Survivability)			講義担当者 所属・職名・氏名	総合生存学館 館長・教授 寶 馨 工学研究科 教授 清野純史 工学研究科 教授 藤井 聡 防災研究所 准教授 佐山敬洋 学際融合教育研究推進センター 特定准教授 清水美香		
開講場所	東一条館 201 大講義室		開講期	前期	曜時限	木 5 限 (16:30-18:00)	
配当学年	修士 博士後期 専門職	対象学生	全学	単位数	2 単位	授業形態	講義	担当形態	リレー	使用言語	英語

〔授業の概要・目的〕

現代の地球社会では、巨大自然災害、突発的人為災害・事故、環境劣化・感染症などの地域環境変動、食料安全保障、といった危険事象や社会不安がますます拡大している。本授業科目では、それらの地球規模、地域規模での事例を紹介するとともに、国レベル、地方レベル、あるいは、住民レベルで、持続可能な社会に向けてどのように対応しているのかを講述する。また、気候、人口、エネルギー問題や社会経済などの変化が予想される状況において、今後考えるべき事柄は何かを議論する。

Modern global society is facing risks or social unrests that are caused by huge natural hazards and disasters, man-made disasters and accidents, regional environmental change/degradation including infectious diseases, and food security. Introducing such examples at global and regional scales, this subject lectures how to cope with them at national, local and community levels for making the society sustainable/survivable. Future countermeasures are also discussed under the uncertain circumstances such as climate change, population growth, energy and socio-economic issues.

上に列挙したような事柄は、地球規模で生起しており、その解決は単独の学問分野でできるものではない。多様な分野からのアプローチが必要である。本科目は、こうした観点から学際的な内容を講述するとともに、異なる学問的背景を持つ教員と学生が教室において議論する場を設ける。

The issues listed above are taking place in many parts of the world and difficult to be solved by a single discipline. Interdisciplinary approach is necessary. This subject gives opportunities to learn and discuss with professors and students who have various different academic backgrounds.

〔到達目標〕

地球社会の安全安心を脅かす巨大自然災害、人為災害事故、地域環境変動、食料安全保障の問題について、基本的知識を得るとともに、こうした問題に関して自らの意見を発表し、異分野の教員、学生とともに議論する能力を高める。

The objectives of this class are to have basic knowledge about global issues threatening safety and security of the earth society such as catastrophic natural disasters, man-made disasters and accidents, regional environmental change and food security, and to enhance student's ability to express his/her own ideas and discuss with professors and students from other study areas.

〔授業計画と内容〕

以下のような内容を行う。スケジュールは、教員の都合により年度ごとに異なる。
The classes will be held as follows. The schedule may change subject to availability of professors.

1. 導入:人類の生存を脅かす様々な地球規模の問題 Introduction: Examples of global issues
2. なぜいまグローバル生存学が必要か? Why we need GSS?
3. 持続可能な発展とレジリエントな社会構築のための地球規模課題 Global agendas for sustainable development and resilient societies
2. 東北地震災害に学ぶ地震災害と減災: Earthquake disaster mitigation -lessons learnt from Tohoku EQ-
3. 歴史的建造物の減災 Mitigation of earthquake damage to historic structures
4. 巨大自然災害とその対策 Catastrophic natural hazards and disaster manag
5. ナショナルレジリエンスの構築について Building national resilience in Japan
6. 全体主義としてのグローバリズム Globalism as totalitarianism
7. リスク環境の変化に対する公共政策とシステムズアプローチ Public policy and systems approach for global changes in disaster risks

8. リスク環境変化に対する災害リスクマネジメントとガバナンス Disaster risk management and governance for global changes
9. 水災害リスクマネジメント Water-related disaster risk management
10. 水循環と気候変動 Water cycle and climate change
11. 学生による発表と全教員との総合討論 Presentation by students and discussions with all professors
12. 学生による発表と全教員との総合討論 Presentation by students and discussions with all professors
13. 学生による発表と全教員との総合討論 Presentation by students and discussions with all professors
14. 学生による発表と全教員との総合討論 Presentation by students and discussions with all professors
15. 総合討論 Discussions among all students and professors

〔履修要件〕

英語での受講、発表、議論ができること。
Students should be able to use English for lectures, presentation and discussion in this class.

〔成績評価の方法・観点及び達成度〕

平常点（出席点）と講義中でのプレゼンテーション。
Attendance to lectures and Presentation and discussion.
ディスカッションなどの講義の特性上、原則毎回講義に出席することを成績評価の前提とする。
As this course includes discussions, students are expected to attend basically all the lectures for the evaluations.

〔教科書〕

特になし。 Nothing special.

〔参考書等〕

特になし。 Nothing special.
日本語では、「自然災害と防災の事典」（丸善出版、2011）が参考になる。

〔授業外学修（予習・復習）等〕

事前に教材が配られる（あるいは web に掲載されダウンロードできる）場合は、予習してくること。授業中に教材が配られること（あるいは事後に web に掲載されること）もある。
これらの教材は復習に利用し、学期後半のプレゼンテーションとディスカッションのために役立てること。
If handouts (teaching materials) are distributed (or downloaded from the website), students should read them prior to the class. They may be distributed at the classroom (or put on the website). Students can make use of them after the class for reviewing lectures and preparing presentation materials and discussion sessions which will be organized in the latter half of the semester.

〔その他（授業外学習の指示・オフィスアワー等）〕

博士課程教育リーディングプログラム「グローバル生存学大学院連携プログラム」（GSS）の必修科目である。
工学研究科以外の学生は、各研究科所定の聴講願を提出すること。
This subject is compulsory for students enrolled in the Inter-Graduate School Program for Sustainable Development and Survivable Societies.

Students other than ones in Graduate School of Engineering should submit a registration card for taking this class.

選択必修科目
Optional Compulsory

801800

科目ナンバリング	G-INF00 58018 LJ11　G-INF00 58018 LJ13									
授業科目名 <英訳>	情報分析・管理論 Information Analysis and Management				担当者所属・職名・氏名	情報学研究科 特定准教授 杉山 一成 経営管理大学院 特定講師 増田　央				
配当学年	1回生以上	単位数	2	開講年度・開講期	2021・前期	曜時限	月4	授業形態	講義	使用言語	日本語
授業種別	研究科共通科目									

[授業の概要・目的]

今日，文理の分野を問わず最先端の研究を進めていくには，大規模データの分析・管理技術が不可欠となっている．本講義では，コンピュータで問題を解くのに必要なモデル化やアルゴリズムと，その情報検索への応用，データの管理およびデータから有用な情報や知識を発見するマイニング技術，情報の分析結果の可視化とインタラクション技術など，様々な分野で利用されているトピックを精選して講述する．特に，具体的な問題に対して，それらの技術をどのように適用できるかを学ぶことで技術の基本的な考え方を理解し，各自の分野で応用が可能になることを目標とする．

[到達目標]

【研究科横断型教育の概要・目的】
上述したように，大規模データの分析・管理技術はあらゆる分野の研究に必要とされている．本授業では，それらの技術の仕組みの基礎を理解するとともに，「情報分析・管理演習」と連携して，各自が具体的な問題に対して技術を実践できるレベルに到達することを目標としている．

[授業計画と内容]

ガイダンス (1回) (担当: 杉山)
講義全体の概要

問題のモデル化と問題の解き方，情報検索 (3回) (担当: 杉山)
　コンピュータで問題を解くために必要となる，問題のモデル化と，問題の解き方，すなわち，アルゴリズムについて学ぶ．具体的には，まず，グラフを用いたモデル化，アルゴリズムとその戦略（計算量，近似，動的計画など），情報検索に用いられるランキング手法PageRankやHITSなどの応用について講述する．さらに，情報科学の他分野への応用について学ぶ．

データマイニング (5回) (担当: 増田)
　データを分析して，有用な情報や知識を発見するための手法について講述する．具体的には，データマイニング技術（相関ルール，クラスタリング，決定木，サポートベクターマシンなど)と，そこで利用されている機械学習やベイズ推定の技術を学ぶ．

データベース (2回) (担当: 杉山)
大規模な情報を管理するデータベース技術について講述する．

情報検索(2回) (担当: 杉山)
　大量の文書データから必要な情報を検索するする技術について講述する．基礎的な検索モデル，索引技術やランキング学習について学ぶことで，現状の検索システムがどのように動作しているのかを理解する．また，検索システムの性能を定量的に評価する方法について理解を深めることにより，より良い検索システムを選択・構築する方法を身につける．

情報分析・管理論(2)へ続く↓↓↓

情報分析・管理論(2)

情報の可視化とオンライン評価 (2回) (担当: 杉山)
**　分析結果などの情報の可視化，情報システムを利用者からのフィードバックに基づき改善する技術を取り上げる．**

[履修要件]

「情報分析・管理演習」を，原則として受講すること．
各自のノートPC等の持ち込みを前提としているが，貸出用のPCも用意している．

[成績評価の方法・観点]

講義で扱った情報分析・管理技術の仕組みを理解し，具体的な問題に応用し，実際にその解を計算できるようになることが達成目標である．各回の出席状況、ならびに数回ごとに扱うテーマに基づいたレポートによって，この目標に到達しているかどうかを検証し，成績を算出する．

[教科書]

特になし

[参考書等]

（参考書）
D. Easley, J. Kleinberg **(著), 浅野孝夫，浅野泰仁 (翻訳) 『ネットワーク・大衆・マーケット: 現代社会の複雑な連結性についての推論** Crowds, and Markets: Reasoning About a Highly Connected World**』（共立出版** Cambridge University Press**）**
Jon Kleinberg, Eva Tardos **(著), 浅野孝夫, 浅野泰仁, 小野孝男, 平田富夫 (翻訳) 『アルゴリズム・デザイン** Algorithm Design**』（共立出版** Addison Wesley**）**
Richard Durbin, Sean R. Eddy, Anders Krogh, Graeme Mitchison 『Biological sequence analysis - Probabilistic models of proteins and nucleic acids-』（Cambridge University Press）
C.M. **ビショップ(著), 元田浩, 栗田多喜夫, 樋口知之, 松本裕治, 村田昇 (翻訳) 『パターン認識と機械学習 -ベイズ理論による統計的予測- 上・下巻** Pattern Recognition and Machine Learning**』（シュプリンガー・ジャパン**Springer-Verlag**）**
Jon M. Kleinberg 『Authoritative Sources in a Hyperlinked Environment』（Journal of the ACM (JACM), 46(5), pages 604-632, 1999.）
L. Page, S. Brin, R. Motwani, and T. Winograd 『The PageRank Citation Ranking: Bringing Order to the Web』（Technical Report SIDL-WP-1999-0120, Stanford Digital Library Technologies Project, 1998.）

[授業外学修（予習・復習）等]

必要な場合は授業中に指定する．

（その他（オフィスアワー等））

前期・後期共に同一内容のリピート科目である．
自身の研究に，種類は問わず，何らかのデータを用いている学生を歓迎する．
オフィスアワーについては特に指定せず，メールのやり取りで随時行う．
杉山一成: kaz.sugiyama@i.kyoto-u.ac.jp, **増田央**: masuda.hisashi.4c@kyoto-u.ac.jp

※オフィスアワーの詳細については、KULASIS**で確認してください。**

選択必修科目
Optional Compulsory

8019000

科目ナンバリング	G-INF00 58019 SJ13　G-INF00 58019 SJ11									
授業科目名 <英訳>	情報分析・管理演習 Information Analysis and Management, Exercise				担当者所属・職名・氏名	情報学研究科 特定准教授 杉山 一成 経営管理大学院 特定講師 増田　央				
配当学年	1回生以上	単位数	1	開講年度・開講期	2021・前期	曜時限	月5	授業形態	演習	使用言語	日本語
授業種別	研究科共通科目									

[授業の概要・目的]

今日，文理の分野を問わず最先端の研究を進めていくには，大規模データの分析・管理技術が不可欠となっている．本講義では，コンピュータで問題を解くのに必要なモデル化やアルゴリズムと，その情報検索への応用，データの管理およびデータから有用な情報や知識を発見するマイニング技術，情報の分析結果の可視化とインタラクション技術など，様々な分野で利用されているトピックを精選して，演習形式で具体的な問題を計算機で解く方法を学ぶ．

[到達目標]

【研究科横断型教育の概要・目的】
上述したように，大規模データの分析・管理技術はあらゆる分野の研究に必要とされている．本授業では，それらの技術の仕組みの基礎を理解するとともに，「情報分析・管理論」と連携して，各自が具体的な問題に対して，プログラミングの演習によって，技術を実践できるレベルに到達することを目標としている．

[授業計画と内容]

・ガイダンス（1回）(担当: 杉山)
　演習の準備およびプログラミング言語Rのインストール，簡単な使い方

・問題のモデル化と問題の解き方，情報検索(3回) (担当: 杉山)
　講義で扱った，グラフを用いたモデル化とアルゴリズム(オイラー閉路，最短経路)やPageRankについて，Rで実際に問題を解く方法を学ぶ．また，問題を解くだけでなく，可視化などを通じて結果を分析する基礎を身につける．

・データマイニング (5回) (担当: 増田)
　データを分析して，有用な情報や知識を発見するデータマイニング技術（相関ルール，クラスタリング，決定木，サポートベクターマシンなど)を，Rで実行する方法を学ぶとともに，得られた結果を解析する．

・データベース (2回) (担当: 杉山)
　大規模な情報を管理するデータベースをMySQLを用いて実現する方法を学ぶ．

・情報検索(2回) (担当: 杉山)
　情報検索の技術をWebベースのシステムを用いて体験し，その仕組みについて理解を深める．

・情報の可視化と対話技術 (2回) (担当: 杉山)
　分析結果などの情報の可視化，情報システムを利用者からのフィードバックに基づき改善する技術について，Python, Jupyter Notebookを用いた演習を行う．

情報分析・管理演習(2)へ続く↓↓↓

情報分析・管理演習(2)

[履修要件]

情報分析・管理論を，原則として受講していること．
プログラミングを伴う演習を受講する意欲があれば，プログラミング経験は問わない．
各自のノートPC等の持ち込みを前提としているが，貸出用のPCも用意している．

[成績評価の方法・観点]

演習で扱った情報分析・管理技術を理解し，具体的な問題に応用し，実際にその解を計算できるようになることが達成目標である．出席状況，ならびに毎週のレポートによってこの目標に到達しているかどうかを検証し，成績を算出する．

[教科書]

特になし

[参考書等]

（参考書）
D. Easley, J. Kleinberg (著), **浅野孝夫，浅野泰仁 (翻訳) 『ネットワーク・大衆・マーケット: 現代社会の複雑な連結性についての推論** Crowds, and Markets: Reasoning About a Highly Connected World』**（共立出版** Cambridge University Press）
Jon Kleinberg, Eva Tardos (著), **浅野孝夫**, **浅野泰仁**, **小野孝男**, **平田富夫 (翻訳)**Jon Kleinberg and Eva Tardos **『アルゴリズム・デザイン**Algorithm Design』**（共立出版**Addison Wesley.）
Richard Durbin, Sean R. Eddy, Anders Krogh, Graeme Mitchison. 『Biological sequence analysis - Probabilistic models of proteins and nucleic acids-』（Cambridge University Press）
C.M. **ビショップ**(著), **元田 浩**, **栗田 多喜夫**, **樋口 知之**, **松本 裕治**, **村田 昇 (翻訳)**C. M. Bishop **『パターン認識と機械学習 -ベイズ理論による統計的予測- 上・下巻**Pattern Recognition and Machine Learning』**（シュプリンガー・ジャパン**Springer-Verlag.）
H. Garcia-Molina, J. D. Ullman, J. Widom 『Database Systems: The Complete Book』（Prentice Hall）
C. J. Date 『An Introduction to Database Systems』（Addison Wesley）
吉川正俊 『データベースの基礎』（オーム社）
W. Bruce Croft, Donald Melzler, Trevor Strohman 『Search Engines: Information Retrieval in Practice』（Addison-Wesley）
Stefan Buettcher, Charles L. A. Clarke, Gordon V. Cormack 『Information Retrieval: Implementing and Evaluating Search Engines』（The MIT Press）
Jenifer Tidwell (著), **ソシオメディア株式会社 (監訳)，浅野紀予 (訳) 『デザイニング・インタフェース～パターンによる実践的インタラクションデザイン～』（オライリー・ジャパン）**
Ben Fry (著), **増井俊之 (監訳) (監修)，加藤慶彦 (翻訳) 『ビジュアライジング・データ** Processing **による情報視覚化手法』（オライリー・ジャパン）**
Marti Hearst 『Search User Interfaces』（Cambridge University Press）

[授業外学修（予習・復習）等]

必要な場合は授業中に指定する．

情報分析・管理演習(3)へ続く↓↓↓

情報分析・管理演習(3)

（その他（オフィスアワー等））

前期・後期共に同一内容のリピート科目である.
自身の研究に，種類は問わず，何らかのデータを用いている学生を歓迎する.
オフィスアワーについては特に指定せず，メールのやり取りで随時行う.
杉山一成: kaz.sugiyama@i.kyoto-u.ac.jp, **増田央**: masuda.hisashi.4c@kyoto-u.ac.jp

※オフィスアワーの詳細については、KULASIS**で確認してください。**

選択必修科目
Optional Compulsory

8018001

科目ナンバリング	G-INF00 58018 LJ11　G-INF00 58018 LJ13											
授業科目名 <英訳>	情報分析・管理論 Information Analysis and Management					担当者所属・職名・氏名	情報学研究科 特定准教授 杉山 一成 経営管理大学院 特定講師 増田　央					
配当学年	1回生以上	単位数	2	開講年度・開講期	2021・後期	曜時限	月4	授業形態	講義	使用言語	日本語	
授業種別	研究科共通科目											

[授業の概要・目的]

今日，文理の分野を問わず最先端の研究を進めていくには，大規模データの分析・管理技術が不可欠となっている．本講義では，コンピュータで問題を解くのに必要なモデル化やアルゴリズムと，その情報検索への応用，データの管理およびデータから有用な情報や知識を発見するマイニング技術，情報の分析結果の可視化とインタラクション技術など，様々な分野で利用されているトピックを精選して講述する．特に，具体的な問題に対して，それらの技術をどのように適用できるかを学ぶことで技術の基本的な考え方を理解し，各自の分野において，応用が可能になることを目標とする．

[到達目標]

【研究科横断型教育の概要・目的】
上述したように，大規模データの分析・管理技術はあらゆる分野の研究に必要とされている．本授業では，それらの技術の仕組みの基礎を理解するとともに，「情報分析・管理演習」と連携して，各自が具体的な問題に対して技術を実践できるレベルに到達することを目標としている．

[授業計画と内容]

ガイダンス (1回) (担当: 杉山)
講義全体の概要

問題のモデル化と問題の解き方，情報検索 (3回) (担当: 杉山)
　コンピュータで問題を解くために必要となる，問題のモデル化と，問題の解き方，すなわち，アルゴリズムについて学ぶ．具体的には，まず，グラフを用いたモデル化，アルゴリズムとその戦略（計算量，近似，動的計画など），情報検索に用いられるランキング手法 (PageRankやHITSなど) の応用について講述する．さらに，情報科学の他分野への応用について学ぶ．

データマイニング (5回) (担当: 増田)
　データを分析して，有用な情報や知識を発見するための手法について講述する．具体的には，データマイニング技術（アソシエーションルール，クラスタリング，決定木，サポートベクターマシンなど)と，そこで利用されている機械学習やベイズ推定の技術を学ぶ．

データベース (2回) (担当: 杉山)
大規模な情報を管理するデータベース技術について講述する．

情報検索 (2回) (担当: 杉山)
　大量の文書データから必要な情報を検索するする技術について講述する．基礎的な検索モデル，索引技術やランキング学習について学ぶことで，現状の検索システムがどのように動作しているのかを理解する．また，検索システムの性能を定量的に評価する方法について理解を深めることにより，より良い検索システムを選択・構築する方法を身につける．

情報分析・管理論(2)へ続く↓↓↓

情報分析・管理論(2)

情報の可視化とオンライン評価 (2回) (**担当**: **杉山**)
分析結果などの情報の可視化，インタラクション技術，情報発信技術を取り上げる．

[履修要件]

「情報分析・管理演習」を，原則として受講すること．
各自のノートPC**等の持ち込みを前提としているが，貸出用の**PC**も用意している．**

[成績評価の方法・観点]

講義で扱った情報分析・管理技術の仕組みを理解し，具体的な問題に応用し，実際にその解を計算できるようになることが達成目標である．各回の出席状況，ならびに数回ごとに扱うテーマに基づいたレポートによって，この目標に到達しているかどうかを検証し，成績を算出する．

[教科書]

特になし

[参考書等]

（参考書）
D. Easley, J. Kleinberg **(著), 浅野孝夫，浅野泰仁 (翻訳) 『ネットワーク・大衆・マーケット: 現代社会の複雑な連結性についての推論** Crowds, and Markets: Reasoning About a Highly Connected World**』（共立出版** Cambridge University Press**）**
Jon Kleinberg, Eva Tardos **(著), 浅野孝夫, 浅野泰仁, 小野孝男, 平田富夫 (翻訳) 『アルゴリズム・デザイン** Algorithm Design**』（共立出版** Addison Wesley**）**
Richard Durbin, Sean R. Eddy, Anders Krogh, Graeme Mitchison 『Biological sequence analysis - Probabilistic models of proteins and nucleic acids-』（Cambridge University Press）
Richard Durbin, Sean R. Eddy, Anders Krogh, Graeme Mitchison. 『Biological sequence analysis - Probabilistic models of proteins and nucleic acids-』（Cambridge University Press）
C.M. **ビショップ(著), 元田浩, 栗田多喜夫, 樋口知之, 松本裕治, 村田昇 (翻訳) 『パターン認識と機械学習 -ベイズ理論による統計的予測- 上・下巻** Pattern Recognition and Machine Learning**』（シュプリンガー・ジャパン**Springer-Verlag**）**
Jon M. Kleinberg 『Authoritative Sources in a Hyperlinked Environment』（Journal of the ACM (JACM), 46(5), pages 604-632, 1999.）
L. Page, S. Brin, R. Motwani, and T. Winograd 『The PageRank Citation Ranking: Bringing Order to the Web』（Technical Report SIDL-WP-1999-0120, Stanford Digital Library Technologies Project, 1998.）

[授業外学修（予習・復習）等]

必要な場合は授業中に指定する．

（その他（オフィスアワー等））

前期・後期共に同一内容のリピート科目である．
自身の研究に，種類は問わず，何らかのデータを用いている学生を歓迎する．
オフィスアワーについては特に指定せず，メールのやり取りで随時行う．
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※オフィスアワーの詳細については、KULASIS**で確認してください。**

選択必修科目
Optional Compulsory

8019001

科目ナンバリング	G-INF00 58019 SJ13　G-INF00 58019 SJ11									
授業科目名 <英訳>	情報分析・管理演習 Information Analysis and Management, Exercise				担当者所属・職名・氏名	情報学研究科 特定准教授 杉山 一成 経営管理大学院 特定講師 増田　央				
配当学年	1回生以上	単位数	1	開講年度・開講期	2021・後期	曜時限	月5	授業形態	演習	使用言語	日本語
授業種別	研究科共通科目									

[授業の概要・目的]

今日，文理の分野を問わず最先端の研究を進めていくには，大規模データの分析・管理技術が不可欠となっている．本講義では，コンピュータで問題を解くのに必要なモデル化やアルゴリズムと，その情報検索への応用，データの管理およびデータから有用な情報や知識を発見するマイニング技術，情報の分析結果の可視化とインタラクション技術など，様々な分野で利用されているトピックを精選して，演習形式で具体的な問題を計算機で解く方法を学ぶ．

[到達目標]

【研究科横断型教育の概要・目的】
上述したように，大規模データの分析・管理技術はあらゆる分野の研究に必要とされている．本授業では，それらの技術の仕組みの基礎を理解するとともに，「情報分析・管理論」と連携して，各自が具体的な問題に対して，プログラミングの演習によって，技術を実践できるレベルに到達することを目標としている．

[授業計画と内容]

・ガイダンス（1回）(担当: 杉山)
　演習の準備およびプログラミング言語Rのインストール，簡単な使い方

・問題のモデル化と問題の解き方，情報検索(3回) (担当: 杉山)
　講義で扱った，グラフを用いたモデル化とアルゴリズム(オイラー閉路，最短経路)やPageRankについて，Rで実際に問題を解く方法を学ぶ．また，問題を解くだけでなく，可視化などを通じて結果を分析する基礎を身につける．

・データマイニング (5回) (担当: 増田)
　データを分析して，有用な情報や知識を発見するデータマイニング技術（相関ルール，クラスタリング，決定木，サポートベクターマシンなど)を，Rで実行する方法を学ぶとともに，得られた結果を解析する．

・データベース (2回) (担当: 杉山)
　大規模な情報を管理するデータベースをMySQLを用いて実現する方法を学ぶ．

・情報検索(2回) (担当: 杉山)
　情報検索の技術をWebベースのシステムを用いて体験し，その仕組みについて理解を深める．

・情報の可視化と対話技術 (2回) (担当: 杉山)
　分析結果などの情報の可視化，情報システムを利用者からのフィードバックに基づき改善する技術について，Python, Jupyter Notebookを用いた演習を行う．

情報分析・管理演習(2)へ続く↓↓↓

情報分析・管理演習(2)

[履修要件]

情報分析・管理論を，原則として受講していること．
プログラミングを伴う演習を受講する意欲があれば，プログラミング経験は問わない．
各自のノートPC等の持ち込みを前提としているが，貸出用のPCも用意している．

[成績評価の方法・観点]

演習で扱った情報分析・管理技術を理解し，具体的な問題に応用し，実際にその解を計算できるようになることが達成目標である．出席状況，ならびに毎週のレポートによってこの目標に到達しているかどうかを検証し，成績を算出する．

[教科書]

特になし

[参考書等]

（参考書）
D. Easley, J. Kleinberg (著), **浅野孝夫，浅野泰仁 (翻訳)** **『ネットワーク・大衆・マーケット: 現代社会の複雑な連結性についての推論** Crowds, and Markets: Reasoning About a Highly Connected World』**（共立出版** Cambridge University Press）
Jon Kleinberg, Eva Tardos (著), **浅野孝夫, 浅野泰仁, 小野孝男, 平田富夫 (翻訳)**Jon Kleinberg and Eva Tardos **『アルゴリズム・デザイン**Algorithm Design』**（共立出版**Addison Wesley）
Richard Durbin, Sean R. Eddy, Anders Krogh, Graeme Mitchison. 『Biological sequence analysis - Probabilistic models of proteins and nucleic acids-』（Cambridge University Press）
C.M. **ビショップ(著), 元田 浩, 栗田 多喜夫, 樋口 知之, 松本 裕治, 村田 昇 (翻訳)**C. M. Bishop **『パターン認識と機械学習 -ベイズ理論による統計的予測- 上・下巻**Pattern Recognition and Machine Learning』**（シュプリンガー・ジャパン**Springer-Verlag.）
H. Garcia-Molina, J. D. Ullman, J. Widom 『Database Systems: The Complete Book』（Prentice Hall）
C.J. Date 『An Introduction to Database Systems』（Addison Wesley）
吉川正俊 『データベースの基礎』（オーム社）
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Stefan Buettcher, Charles L. A. Clarke, Gordon V. Cormack 『Information Retrieval: Implementing and Evaluating Search Engines』（The MIT Press）
Jenifer Tidwell (著), **ソシオメディア株式会社 (監訳), 浅野紀予 (訳)** **『デザイニング・インタフェース〜 パターンによる実践的インタラクションデザイン 〜』（オライリー・ジャパン）**
Ben Fry (著), **増井俊之 (監訳) (監修), 加藤慶彦 (翻訳)** **『ビジュアライジング・データ** Processing**による情報視覚化手法』（オライリー・ジャパン）**
Marti Hearst 『Search User Interfaces』（Cambridge University Press）

[授業外学修（予習・復習）等]

必要な場合は授業中に指定する．

情報分析・管理演習(3)へ続く↓↓↓

選択必修科目
Optional Compulsory

情報分析・管理演習(3)

（その他（オフィスアワー等））

前期・後期共に同一内容のリピート科目である.
自身の研究に，種類は問わず，何らかのデータを用いている学生を歓迎する.
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杉山一成: kaz.sugiyama@i.kyoto-u.ac.jp, **増田央**: masuda.hisashi.4c@kyoto-u.ac.jp

※オフィスアワーの詳細については、KULASIS**で確認してください。**

8942000

授業科目名 <英訳>	戦争・災害の心理臨床 Clinical Psychology of War and Disaster	担当者所属・職名・氏名	

配当学年	院	単位数	2	開講年度・開講期	2021 不開講	曜時限		授業形態	特論	使用言語	英語

共用科目	

[授業の概要・目的]

War, conflict, and civil war is disaster per se, while it can be tragic result following other disaster, for instance natural disaster. Also, it can be cause and risk of other disaster by escalating vulnerability of people under war, conflict, and civil war. In this lecture, we will tackle to war as disaster, interaction with other natural disaster, and reconciliation process which is a specific character in war and is not observed in natural disaster. However, knowledge of reconciliation will suggest how human can co-exist and have relation with nature, the cause of disaster. Political, economical, racial, religious, and cultural researchers contributed enormously to this field, and here we will work with it from clinical psychological perspectives.

[到達目標]

To understand general overview of war, disaster, and its relation.
To know how human safety and security is damaged by war and disaster.
To have knowledge of aids and supports for people under war and disaster.
To understand the process of reconciliation.

[授業計画と内容]

1. Introduction to the lecture
3. Watching movie "Haider" or "Jonny Mad Dog"
4. Discussion based on the movie
5. Group activity
6. Survivors' issues
7. Group activity
8. Solders' issues
9. Group activity
10. Climate change and war
11. Group activity
12. Reconsiliation
13. Group activity
14. & 15. Group presentation and discussion

[履修要件]

特になし

[成績評価の方法・観点及び達成度]

Evaluation in this lecture will be done by attendance, and engagement and articulation in discussion.

[教科書]

授業中に指示する

戦争・災害の心理臨床(2)へ続く↓↓↓

戦争・災害の心理臨床(2)

[参考書等]

（参考書）
授業中に紹介する

[授業外学習（予習・復習）等]

Students are required to work by themselves for group activities.

（その他（オフィスアワー等））

オフィスアワー実施の有無は、KULASIS**で確認してください**。

※オフィスアワー実施の有無は、KULASIS**で確認してください**。

工学研究科

科目名 ： 技術者倫理と技術経営

科目コード	10G057
配当学年	**修士課程 1 年**
開講期	**前期**
曜時限	**木曜 3 時限**
講義室	C3-講義室1、2、3、4
単位数	2
履修者制限	**無**
講義形態	**講義と演習**
言語	**日本語**
担当教員	**椹木，西脇，富田，小森（雅），土屋，野田，佐藤，伊勢田**

講義概要

将来，社会のリーダー，企業などでのプロジェクトリーダーとなるべき人間が基本的に知っておくべき工学倫理と技術経営の基礎知識を講義し，それをもとに，グループワークとしての討論と発表をする．「工学倫理」は，工学に携わる技術者や研究者が社会的責任を果たし，かつ自分を守るための基礎的な知識,知恵であり，論理的思考法である．「技術経営」とは，技術者・研究者が技術的専門だけにとどまるのではなく，技術を効率的・効果的に事業成果に結びつけるための基礎的な思考法を提供するマネジメント論である．以上について，各専門の講師団を組織し，講義，討論，発表を組み合わせた授業を行う．

評価方法

レポートと発表

最終目標

自立した技術者を養成する．

講義計画

項目	回数	内容説明
工学倫理	9	1.工学倫理の概論 2. 医工学倫理 3. ع هي 4. 製造物の安全と製造物責任

		5.「広義のものづくり」と技術者倫理（１） 6.「広義のものづくりと技術者倫理（２） 7.【グループディスカッション結果の発表、全体討論。１室で実施】 8.技術者倫理の歴史と哲学 9.技術者倫理の課題発表
技術経営	5	1.プロダクト・ポートフォリオ，競争戦略 2.事業ドメイン，市場分析技術経営 3.企業での研究開発の組織戦略 4.研究開発の管理理論 5.技術経営の課題発表 1
総括	1	

教科書

なし

参考書

なし

予備知識

なし

授業 URL

その他

選択必修科目
Optional Compulsory

5133

科目ナンバリング	G-LAS10 80007 LE31						
授業科目名 <英訳>	リスク公共相関論 Risk and Society			担当者所属 職名・氏名	アジア・アフリカ地域研究研究科 特定准教授 西　真如		
群	大学院横断教育科目群	分野(分類)	人文社会科学系			使用言語	英語
旧群		単位数	2単位	週コマ数	1コマ	授業形態	講義
開講年度・開講期	2021・不開講	曜時限		配当学年	大学院生	対象学生	全学向

（アジア・アフリカ地域研究研究科の学生は，全学共通科目として履修登録できません。所属部局で履修登録してください。）

[授業の概要・目的]

This course deals with issues concerning health risks with particular reference to theories and discussions in medical anthropology. We will explore how the diverse values and beliefs of people in different parts of the world affect the outcomes of some public health interventions. We will discuss the relevance of health interventions by comparing the perspectives of various stakeholders, including policymakers, experts, community members, and patients.

The sessions will be conducted in English. The lecturer will guide non-native English speakers to become more comfortable to express opinions in English to participate actively in the classroom discussion.

[到達目標]

This lecture aims at providing graduate students with skills and knowledge for arguing theoretical and practical issues that emerge at the intersection of culture and medicine.

[授業計画と内容]

Part I. Lecture
Lesson 1: Culture, health, and health interventions
Lesson 2: Health and cross-cultural encounters
Lesson 3: Technologies of global health
Part II. HPV vaccination for scheduled tribes in India
Lesson 4: Discussion
Lessons 5-7: Presentations
Lesson 8: Wrap up lecture
Part III. Living with epilepsy in Africa
Lesson 9: Discussion
Lessons 10-12: Presentations
Lesson 13: Wrap up lecture
Part IV. Wrap up discussion
Lesson 14: Wrap up discussion

[履修要件]

Basic ability to communicate in English.

[成績評価の方法・観点]

Grading is based on contribution to the class, presentation and class reports.

リスク公共相関論(2)へ続く↓↓↓

リスク公共相関論(2)

[教科書]

To be furnished by the instructors.

[参考書等]

（参考書）
授業中に紹介する

[授業外学修（予習・復習）等]

Registered students are required to come prepared to participate in classroom discussion, having finished reading assignments.

[その他（オフィスアワー等）]

Category	(b) Field Training / フィールド実習

Outline and objectives

You are expected to plan and conduct the field training which is related to your research project as well as to Global Survivability Studies issues. Field trainings with an interdisciplinary perspective will be valued highly. You are required to set the goals of field training by referring to the GSS rubric and by consulting your supervisor and mentors.

履修者の研究計画およびGSSの達成目標に関連する内容のフィールド実習を実施すること。学際的な視野にもとづく実習は高く評価される。実習の目的は、GSS の達成目標を参照しつつ、指導教員およびメンターと相談して設定すること。

Plan and content

You are expected to plan and conduct your field training in Japan or abroad for at least a week. Field training may consist in activities such as observations, experiments, and interviews. Field training consists of four stages; planning, implementation, reporting, and evaluation. The GSS ePortfolio system guides you take necessary actions at each stage.

フィールド実習は、海外あるいは国内において、1 週間以上の期間にわたり、観測、実験、インタビューその他の手法を用いて実施すること。実習の履修過程は、計画、実施、報告、評価の 4 つの段階からなる。e ポートフォリオ・システム(GSSfolio)を活用して、それぞれの段階に要求される内容を達成すること。

Requirements

You are expected to submit a research activity plan four weeks prior to the date you wish to start your field training. Consult your supervisor when you plan the field training. You are required to submit a summary of activities within four weeks after the end date of the field training. You are also required to deliver a presentation at one of the GSS research activities presentation meetings, which is organized several times a year.

履修者は、フィールド実習の開始日よりも 4 週間以上前に、計画書を提出せねばならない。実習を計画する際には、指導教員とよく相談すること。履修者は、実習が終了した日から 4 週間以内に活動サマリーを提出せねばならない。また、年に数回開催される活動報告会において、実習の成果についてのプレゼンテーションをおこなわねばならない。

Methods and criteria of assessment

Your achievements in the field training are evaluated based on the quality your presentation at the GSS research activity presentation meeting. Criteria of assessment include: willingness to address real-world problems, clear explanation of your own research, professional presentation skills, and English skills.

フィールド実習の成果は実習報告会におけるプレゼンテーションによって評価される。評価項目には現実世界の問題への対処、研究内容に関する明確な説明、プレゼンテーション技術、および英語力が含まれる。

Textbooks

Books for reference

Remarks
Be aware and observe travel precautions when conducting overseas trips. Make sure that you have secured the budget when you propose field training. 海外で実習をおこなう場合は渡航安全情報に注意し、無理な渡航はおこなわないこと。 実習を計画する際には、必要な予算を確保すること。

Category	(c) Internship / インターンシップ

Outline and objectives

You are expected to enhance your research and communication skills by taking part in an internship program. You are required to set the goals of internship by referring to the GSS rubric and by consulting your supervisor and mentors.

履修者は、インターンシップの実施を通して研究およびコミュニケーションのスキルを高めることが求められる。インターンシップの目的は、GSS の達成目標を参照しつつ、指導教員およびメンターと相談して設定すること。

Plan and content

You are expected to choose your counterpart(s) from among GSS international advisers or GSS industry-government-academy collaboration advisers, governmental agencies, international organizations, and overseas and domestic universities. This activity consists of four stages; planning, implementation, reporting, and evaluation. The period of activity is at least seven days. The GSS ePortfolio system guides you take necessary actions at each stage.

インターンシップの実施先は、GSS 国際アドバイザーあるいは産官学連携アドバイザーの所属先の他、各国の政府機関、国際機関、海外および国内の大学等から選ぶことができる。インターンシップの履修過程は、計画、実施、報告、評価の 4 つの段階からなり、実施期間は 7 日以上とする。e ポートフォリオ・システムを活用して、それぞれの段階に要求される内容を達成すること。

Requirements

You are expected to submit a research activity plan four weeks prior to the date you wish to start the internship. Consult your supervisor when you plan the internship. You are required to submit a summary of activities within four weeks after the end date of the internship. You are also required to deliver a presentation at one of the GSS research activities presentation meetings, which is organized several times a year.

履修者は、インターンシップの開始日よりも 4 週間以上前に計画書を提出せねばならない。インターンシップを計画する際には、指導教員とよく相談すること。履修者は、インターンシップが終了した日から 4 週間以内に活動サマリーを提出せねばならない。また、年に数回開催される活動報告会において、インターンシップの成果についてのプレゼンテーションをおこなわねばならない。

Methods and criteria of assessment

Your achievements in the internship are evaluated based on the quality of your presentation at the GSS research activity presentation meeting. Criteria of assessment include: practicing multicultural collaborations, clear explanation of your own research, professional presentation skills, and English skills.

インターンシップの成果は実習報告会におけるプレゼンテーションによって評価される。評価項目には異文化交流、研究内容に関する明確な説明、プレゼンテーション技術、および英語力が含まれる。

Textbooks

Books for reference

Remarks
Be aware and observe travel precautions when conducting overseas trips. Make sure that you have secured the budget when you propose internship. 海外でインターンシップをおこなう場合は渡航安全情報に注意し、無理な渡航はおこなわないこと。 インターンシップを計画する際には、必要な予算を確保すること。

Category	(d) Interdisciplinary Seminar / 学際ゼミナール

Outline and objectives

The subject aims to cultivate a broad vision without immersing in your own discipline and acquire leadership skills. Students are required to participate in a variety of seminars covering a wide array of research subjects and Leadership Development Workshop, and expected to gain insight through discussion.

個別分野の研究に埋没することなく複眼的な視野を養成し、リーダーシップを発揮するために、幅広い分野の研究に関するゼミナール及びリーダーシップ育成ワークショップに参加し、討論を通じて見識を養う。

Plan and content

The details of Interdisciplinary Seminars appear on the GSS website with code-numbers such as "【＃〇-〇】". Students are required to attend a total of 15 sessions of seminars over their 5 years in the GSS program. Students entering the GSS program in or after 2014 academic year at least must attend 4 sessions of Leadership Development Workshops.
Students will participate in each seminar with a single or multiple sessions as follows:

1-session seminar

2-session seminar

4-session seminar

5-session seminar

8-session seminar

15-session seminar

Interdisciplinary Seminars are in principle held within the campuses of Kyoto University.

学際ゼミナールは、GSS のホームページに開催情報が掲載される【＃〇-〇】の番号が付いたゼミナールが対象である。履修認定には、L5 までの間に 15 回の出席が求められる。平成 26 年度以降の入学者は、そのうち少なくとも 4 回のリーダーシップ育成ワークショップに出席しなければならない。また、学際ゼミナールには 1 回、2 回、4 回、5 回、8 回、15 回のいずれかの組み合わせがある。学際ゼミナールは原則として京都大学構内において開催される。

Requirements

No requirement

なし

Methods and criteria of assessment

Attendance to a total of 15 sessions including 4 sessions of Leadership Development Workshop is required. Students are not allowed to be late more than 30 minutes per one session and exit in the middle of the seminars or workshop.

4 回のリーダーシップ育成ワークショップを含む合計 15 回の出席。ゼミナールやワークショップへの 30 分以上の遅刻または途中退出は認められない。

Textbooks

Books for reference

Remarks

Category	(e) International Academic Exchange / 国際学術交流

Outline and objectives

You are expected to enhance your skills in international research exchange either by participating in an international school or by delivering your presentations in international conferences or international academic meetings. You are required to set the goals of these activities by referring to the GSS rubric and by consulting your supervisor and mentors.

履修者は、国際スクールへの参加あるいは国際学術集会での報告を通して、国際学術交流のスキルを高めるよう求められる。この活動の目的は、GSS の達成目標を参照しつつ、指導教員およびメンターと相談して設定すること。

Plan and content

International school: You are expected to take part in an international school for more than a week (five working days). A typical international school is organized either by overseas or domestic universities or institutions to provide a series of courses, workshops and discussions for international students and researchers. This activity consists of four stages; planning, implementation, reporting, and evaluation. The GSS ePortfolio system guides you take necessary actions at each stage.

国際スクール: 履修者は、海外あるいは国内の大学あるいは機関が概ね 1 週間以上（実質 5 日以上）の期間にわたって実施する国際スクールに参加する。国際スクールとは、さまざまな国や地域から参加する学生・研究者を対象として、集中的に講義、ワークショップ、討論などをおこなうものを指す。この活動の履修過程は、計画、実施、報告、評価の 4 つの段階からなる。e ポートフォリオ・システムを活用して、それぞれの段階に要求される内容を達成すること。

International conferences/international academic meetings: You are required to conduct oral or poster presentations as the first author at two or more different international conferences or international academic meetings. This activity consists of four stages; planning, implementation, reporting, and evaluation. The GSS ePortfolio system guides you take necessary actions at each stage.

国際学術集会: 履修者は、ふたつ以上の異なる国際学術集会において、筆頭報告者として口頭あるいはポスター発表をおこなう。この活動の履修過程は、計画、実施、報告、評価の 4 つの段階からなる。e ポートフォリオ・システムを活用して、それぞれの段階に要求される内容を達成すること。

Requirements

International School: You are expected to submit a plan of activities four weeks prior to the date you wish to join the international school. On completion of the program you will be asked by the GSS office to submit the certificate issued by the organizer of the international school. You are required to submit a summary of activities within four weeks after the end date of the international school. You are also required to deliver a presentation at one of the GSS research activities presentation meetings which is organized several times a year.

国際スクール: 履修者は、国際スクールの開始日よりも 4 週間以上前に、計画書を提出せねばならない。また帰国後に、国際スクールの主催者が発行する修了証をGSS事務室に提出すること。また国際スクールが終了した日から4週間以内に実施サマリーを提出せねばならない。その上で、年に数回開催される活動報告会においてプレゼンテーションをおこなわねばならない。

International conferences/international academic meetings: You are expected to submit a plan of activities four weeks prior to the date you attend each conference. The abstract of your paper must be attached to the plan of activities. The program of the conference that shows your name and the title of your presentation should also be submitted. You are required to submit a summary of activities within four weeks after each conference. A copy of the paper read (or a reduced-size copy of the poster seen) at the conference should be attached to the summary. After you have conducted two or more presentations you are required to deliver a presentation at one of the GSS research activities presentation meetings which is organized several times a year.

国際学術集会:履修者は、各集会の開始日よりも 4 週間以上前に計画書を提出せねばならない。計画書には報告要旨を添付すること。加えて、履修者の氏名と発表タイトルが記載された集会プログラムも提出すること。各集会が終了したあと、4 週間以内に実施サマリーを提出せねばならない。実施サマリーには、報告にもちいた資料(あるいはポスターの縮刷り)を添付すること。ふたつ以上の報告を終えたあと、年に数回開催される活動報告会においてプレゼンテーションをおこなわねばならない。

Methods and criteria of assessment

Your achievements in international academic exchange are evaluated based on the quality of your presentation at the GSS research activity presentation meeting. Criteria of assessment include: appropriate scientific communication, clear explanation of your own research, professional presentation skills, and English skills.

国際学術交流の成果は実習報告会におけるプレゼンテーションによって評価される。評価項目には適切なサイエンス・コミュニケーションのスキル、研究内容に関する明確な説明、プレゼンテーション技術、および英語力が含まれる。

Textbooks

Books for reference

Remarks

Be aware and observe travel precautions when conducting overseas trips.
Make sure that you have secured the budget when you propose the activity.

海外に渡航する場合は安全情報に注意し、無理な渡航はおこなわないこと。
国際学術交流を計画する際には、必要な予算を確保すること。

Category	(f) Industry-University Collaborative Project / 産学連携プロジェクト

Outline and objectives

You are expected to propose and implement a project in partnership with one or more staff member(s) of a company, a non-governmental (non-profit) organization, or a public enterprise, and to conduct this project with the partner(s). Members of GSS industry-government-academy collaboration advisers and international advisers are possible partners for an Industry-University Collaborative Project. A typical industry-university collaborative project may consist of collaborative research activities, research tool development, workshops, or other forms of activities. You are expected to cultivate leadership by organizing a project team and by leading the team to accomplish a common goal. Unique goals that address global survivability issues are valued highly. You are required to set the goals of the project by referring to the GSS rubric and by consulting your supervisor and mentors. You are encouraged to consider the project as an important step to establish your career path since it provides an ideal opportunity to make connections in companies, non-government (non-profit) organizations, or public enterprises.

企業、非政府組織（非営利組織）、あるいは公の団体のスタッフをパートナーとして、共同でプロジェクトを提案・実施すること。GSS 産官学連携アドバイザーあるいは国際アドバイザーの中からパートナーを選んでもよい。典型的な産学連携プロジェクトは、共同研究活動、調査ツールの開発、ワークショップの実施、その他の活動を含む。履修者はプロジェクトチームを形成し、共通の目標達成に向けてチームを導くことで、リーダーシップを涵養することが期待される。グローバル生存学の目的に関連したユニークな目標設定は、高く評価される。プロジェクトの目標は、GSS の達成目標を参照しつつ、指導教員およびメンターと相談して設定すること。また履修者は、このプロジェクトの実施をとおして企業、非政府組織（非営利組織）、あるいは公の団体との関係を構築し、自らのキャリアパスを開拓することが求められている。

Plan and content

An industry-university collaborative project consists of four stages; planning, implementation, reporting, and evaluation. The GSS ePortfolio system guides you take necessary actions at each stage. You are expected to plan and implement a project as the leader of the project team. You are encouraged to organize an industry-university collaborative team that works together for several weeks or months to achieve common goals. You may implement the project as part of a wider project already under implementation. However, you are still expected to organize your own team (within the wider project) and have it work to achieve your own goals.

産学連携プロジェクトの履修過程は、計画、実施、報告、評価の4つの段階からなる。eポートフォリオ・システム(GSSfolio)を活用して、それぞれの段階に要求される内容を達成すること。履修者は、プロジェクトチームのリーダーとして、プロジェクトを計画し実施することが求められる。履修者は、産学連携チームを組織し、数週間あるいは数ヶ月にわたって共通の目標達成のために共同で取り組むことが求められる。すでに実施中のより大きな産学連携プロジェクトの一部として、履修者のプロジェクトを実施することもできる。ただしその場合にも、履修者が独自に設定した目標を達成するためのチームをプロジェクト内に組織する必要がある。

Requirements

Consult with your supervisor when you select and negotiate with project partners. GSS office may request you to submit documents that prove the willingness of the partners to work within your project. Note that you are expected to submit a plan of activities four weeks prior to the date you wish to start the project. You are required to submit a project report within four weeks after the end date of the project. The report must be checked by the supervisor before submission. You are also required to deliver a presentation at one of the GSS research activities presentation meetings, which are organized several times a year.

プロジェクトのパートナー選定にあたっては、指導教員とよく相談すること。GSS 事務室は、パートナーがプロジェ

クトへの参加を了承したことを示す文書の提出を求めることがある。履修者はプロジェクトの開始日よりも 4 週間以上前に、計画書を提出せねばならない。また履修者はプロジェクトが終了した日から 4 週間以内にプロジェクト報告書を提出せねばならない。報告書の提出にあたっては、指導教員に内容を確認してもらうこと。また、年に数回開催される活動報告会において、プロジェクトの成果についてのプレゼンテーションをおこなわねばならない。

Methods and criteria of assessment

Your achievements in the industry-university collaborative project are assessed mainly based on the quality of your project report. Your presentation is also taken into consideration. Criteria of assessment include skills for project management, demonstrating initiative, clear explanation of your own research, good writing style, and English writing skills.

産学連携プロジェクトは、主に報告書の内容によって評価される。プレゼンテーションの結果も考慮される。評価項目にはプロジェクトマネジメントの技術、主体性の発揮、研究内容に関する明確な説明、文章のスタイルおよび英文の適切さが含まれる。

Textbooks

Books for reference

Remarks

Be aware and observe travel precautions when conducting overseas trips.
Make sure that you have secured the budget when you propose a project.

海外でプロジェクトを実施する場合は渡航安全情報に注意し、無理な渡航はおこなわないこと。
産学連携プロジェクトを計画する際には、必要な予算を確保すること。

Category	(g) International Cooperation Project / 国際共同プロジェクト

Outline and objectives

You are expected to implement a project in partnership with overseas institutions (such as universities, research institutions, and business enterprises), non-government (non-profit) organizations, individual counterparts, and research collaborators (including students). Members of GSS industry-government-academy collaboration advisers and international advisers are also possible partners of an international cooperative project. A typical international cooperative project may consist of corroborative research activities, workshops, conferences, or other forms of activities. You are expected to cultivate leadership by organizing and leading a project team to set and accomplish the common goals. Unique goals that address the global survivability issues are valued highly. You are required to set the goals of the project by referring to the GSS rubric and by consulting your supervisor and mentors.

履修者は、海外の機関（大学、研究所、営利企業等を含む）、非政府組織（非営利組織）、個人あるいは研究協力者（学生を含む）と共同でプロジェクトを実施せねばならない。GSS 産官学連携アドバイザーや国際アドバイザーに対して、国際共同プロジェクトのパートナーとなるよう要請してもよい。典型的な国際共同プロジェクトは、共同研究、ワークショップ、あるいはカンファランス等の活動を含む。履修者は、プロジェクトチームを組織し、共通の目標を設定し達成するよう導くことで、リーダーシップを涵養することが求められている。グローバル生存学の目標に関連するユニークな目標設定は、高く評価される。国際共同プロジェクトの目的は、GSS の達成目標を参照しつつ、指導教員およびメンターと相談して設定すること。

Plan and content

An international cooperative project consists of four stages; planning, implementation, reporting, and evaluation. The GSS ePortfolio system guides you take necessary actions at each stage. You are expected to plan and implement a project as the leader of the project team. You are encouraged to organize an international collaboration team that works together for several weeks or months to achieve common goals. You may implement the project as part of a wider project already under implementation. However, you are still expected to organize your own team (within the wider project) and have it work to achieve your own goals.

国際共同プロジェクトの履修過程は、計画、実施、報告、評価の 4 つの段階からなる。e ポートフォリオ・システム(GSSfolio)を活用して、それぞれの段階に要求される内容を達成すること。履修者は、プロジェクトチームのリーダーとして、プロジェクトを計画し実施することが求められる。履修者は国際共同チームを組織し、数週間あるいは数ヶ月にわたって共通の目標達成のために共同で取り組むことが求められる。すでに実施中のより大きなプロジェクトの一部として、履修者のプロジェクトを実施することもできる。ただしその場合にも、履修者が独自に設定した目標を達成するためのチームをプロジェクト内に組織する必要がある。

Requirements

Consult with your supervisor when you select and negotiate with project partners. GSS office may request you to submit documents that prove the willingness of the partners to work within your project. Note that you are expected to submit a plan of activities four weeks prior to the date you wish to start the project. You are required to submit a project report within four weeks after the end date of the project. The report must be checked by the supervisor before submission. You are also required to deliver a presentation at one of the GSS research activities presentation meetings, which are organized several times a year.

プロジェクトのパートナー選定にあたっては、指導教員とよく相談すること。GSS 事務室は、パートナーがプロジェクトへの参加を了承したことを示す文書の提出を求めることがある。履修者はプロジェクトの開始日よりも 4 週間以上前に、計画書を提出せねばならない。また履修者はプロジェクトが終了した日から 4 週間以内にプロジ

ェクト報告書を提出せねばならない。報告書の提出にあたっては、指導教員に内容を確認してもらうこと。また、年に数回開催される活動報告会において、プロジェクトの成果についてのプレゼンテーションをおこなわねばならない。

Methods and criteria of assessment

Your achievements in the international cooperative project are assessed mainly based on the quality of your project report. Your presentation is also taken into consideration. Criteria of assessment include skills for project management, demonstrating initiative, clear explanation of your own research, good writing style, and English writing skills.

国際共同プロジェクトは、主に報告書の内容によって評価される。プレゼンテーションの結果も考慮される。評価項目にはプロジェクトマネジメントの技術、主体性の発揮、研究内容に関する明確な説明、文章のスタイルおよび英文の適切さが含まれる。

Textbooks

Books for reference

Remarks

Be aware and observe travel precautions when conducting overseas trips.
Make sure that you have secured the budget when you propose a project.

海外でプロジェクトを実施する場合は渡航安全情報に注意し、無理な渡航はおこなわないこと。
国際共同プロジェクトを計画する際には、必要な予算を確保すること。