

Course Number	09006
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2009 「The International Priority Graduate Programs (PGP)」

~Advanced Graduate Courses for International Students~

【1. Profile of the University】

①University Department	The University of Tokyo Graduate School of Frontier Sciences			
②President	HAMADA Junichi			
③Address (Headquarters)	Hongo 7-3-1, Bunkyo-ku, Tokyo 113-8654			
④Contact	Division	Division of Academic Affairs, Graduate School of Frontier Sciences		
	Contact Person's Name	FUTATSUGAMI Kazuhiro	e-mail	k-kyomu@kj.u-tokyo.ac.jp
	TEL/FAX Number	TEL:04-7136-4007 FAX:04-7136-4010		
⑤Web Address	http://www.u-tokyo.ac.jp/index_e.html			
⑥Enrollment (only Graduate School)	195 (including MEXT's Scholarship Students: 67)			

【2. Outline of the Course】

①Course	Doctoral Course, Graduate Program in Sustainability Science
②Degree	Ph.D. in Sustainability Science (3 years)
③Form	Offered by single university
④Graduate Course, Department	Graduate Program in Sustainability Science, Graduate School of Frontier Sciences
	Address: 5-1-5 Kashiwanoha, Kashiwa-shi, Chiba 277-8563
⑤Collaboration (Universities, Graduate Courses, Departments)	- Division of Environmental Studies, Graduate School of Frontier Sciences (4 Departments: Natural Environmental Studies; Environmental Systems; Human Environmental Studies; Socio-cultural Environmental Studies) - IR3S (Integrated Research System for Sustainability Science)
⑥Quota	4 (including MEXT's Scholarship Students: 2) (including Japanese Students: 2)
⑦Faculties	16 (Fulltime: 13; Full Time (other departments): 3; Part Time: 0)
⑧Representative of the Course	Job Title: Dean, Graduate School of Frontier Sciences
	Name: YAMATO Hiroyuki

【3. Contents of the Course】

1. Overview of Program

The Doctoral Course of the Graduate Program in Sustainability Science (GPSS) is designed to nurture competent researchers and experts with international experiences who are willing to contribute to understanding and establishing a sustainable society. Those who complete the program are given a Ph.D. in Sustainability Science. As English is the official language of the program, all lectures and practical courses are provided in English. Applicants are selected either through entrance examination at Kashiwa campus or through a separate admission procedure based on application materials specifically for overseas applicants. Students entering this program have a wide variety of specializations and backgrounds. This program is aimed at providing students with basic concepts, methodologies, and practical tools which will be important in making steps towards a sustainable society through a unique curriculum emphasizing exercises for mastering necessary skills. Students with diverse academic as well as cultural backgrounds explore various issues related to sustainability through exercises and projects and acquire knowledge and skills.

The doctoral course put a particular emphasis on trans-disciplinary approaches for investigating complex, dynamic interactions between natural, social, and human systems. Based upon the methodologies developed through accumulating research activities at the Division of Environmental Studies, which is essentially trans-disciplinary in the sense that existing academic disciplines collaborate with each other, GPSS explores various issues connected with each other in complex manners, which will be influencing the sustainability of the earth in unpredictable ways. Spatial and temporal bonding conditions, including limitations of resources and lands, are strongly recognized in the field of sustainability science. GPSS intends to utilize not only analytical methodologies but also integrative approaches to understand the complexity and dynamics of socio-natural interdependencies and to make robust and feasible proposals for the future. Through such approaches the doctoral course of GPSS is aimed at cultivating human resources for the next generation in the field of sustainability science as well as contributing to developing this field as an established academic field.

2. Objectives

The objective of this program is to nurture researchers and experts who will take active roles in efforts to achieve sustainability in socially, culturally and economically diverse environments at global as well as local levels. A sustainable society will require pursuing sustainability at different special and temporal dimensions. That will include, among others, securing intergenerational equity between the present and future generations, correcting income gaps between developed and developing countries, and maintaining the quality of life without imposing unrecoverable burdens on the functions of the ecosystem.

Towards these objectives this program provides students with necessary knowledge and experiences related to various sustainability issues. The doctoral program creates an intellectual atmosphere for close interactions among students and faculty members having a large degree of diversity with regard to academic disciplines and cultural backgrounds. A wide variety of lectures and exercises are offered to students to help them acquire concepts, methodologies, and practical tools which are important in sustainability science, such as systems thinking and consensus building. Students are strongly encouraged to make new proposals for solutions to various sustainability issues with feasibility, solidly founded on mutual understanding among relevant stakeholders. As it is crucial to take cultural as well as geographical conditions into consideration in implementing measures for achieving sustainability on a global scale, GPSS places a particular emphasis of its educational and research activities on fostering a strong awareness of the current environmental and social circumstances in Asia.

3. Admission Procedures

This program accepts students from a wide variety of experience and expertise. After enrolling in the program, students will have close interactions with those coming from different backgrounds. The purpose of this program is to help students develop the knowledge and experiences which will be necessary to contribute

to creating a sustainable society, firmly building upon the foundations of their previous specializations. We are looking for students having willingness to understand a diverse set of sustainability issues from comprehensive, long-term perspectives. It is also important that they possess skills for logical thinking to process various pieces of information and to adapt them for use in specific purposes, as well as capacities for grasping different aspects and components involved in the concept of sustainability. Moreover, as sustainability science requires appropriate understanding of natural sciences, social sciences, and humanities and interfaces between them, students with flexibility and broadness in thinking will be welcome.

Students are admitted to the program through one of the two procedures; through an entrance examination carried out at Kashiwa Campus of the University of Tokyo or through a screening procedure based on application documents (e.g., International Priority Graduate Programs, Asian Development Bank Scholarship Program, etc.). Details on these selection schemes are posted on the Graduate School of Frontier Science website.

4. Expectations for Students

Sustainability science, which is aimed at understanding the fundamental character of interactions between natural, human, and social systems, covers a wide range of academic fields and disciplines. Thus it is of critical importance to make appropriate use of knowledge and information on diverse aspects, ranging from natural environment and artifacts to economy and culture. Sustainability science has to be based on a firm understanding of the fundamental characters of complex interactions and interdependencies between natural, human, and social systems at the global scale. That will require an integration of various academic disciplines, from natural sciences and engineering to social sciences and humanities. Scientific information and knowledge need to be created and communicated effectively as well as efficiently, transcending disciplinary and geographical boundaries in the field of sustainability science.

In the doctoral program, students are encouraged to tackle cross-cutting problems by assembling relevant knowledge and expertise. It is expected that students will delve into multiple academic disciplines to understand existing research findings and integrate them for a systemic approach to the phenomena to be examined. Examples for the theme of doctoral research would include, among others, integrated water management and governance in a region with a severe constraint on water resources, theoretical investigation into what constitute sustainability science, development and diffusion of on-demand buses in an aging society, and strategies for food and energy security for a country where natural resources are limited.

5. Degree

Ph.D. in Sustainability Science

6. Curriculum

The doctoral program mainly consists of conducting a doctoral research, based on which all students is required to write a doctoral dissertation. As the theme of the doctoral research may not be adequately discussed within an existing discipline, students might be interested in applying interdisciplinary approaches to a specific issue related to sustainability or making a proposal for new institutions, values, or paradigms designed to build a sustainable society, going beyond simply analyzing specific environmental problems.

Since research on sustainability would require diverse concepts, tools, and methodologies, GPSS students are strongly encouraged to discuss with different faculty members and to choose his/her principal advisor after careful deliberation. The topic of a thesis is decided through discussions with his/her principal advisor. Since the program is aimed at providing students with concepts and methodologies for utilizing and integrating diverse academic fields and disciplines, each student will also choose an co-advisor, preferably with a background which is different from that of his/her principal advisor. At the end of the program, each student needs to defend his/her doctoral dissertation in front of the members of the GPSS managing committee.

7. Website

<http://www.sustainability.k.u-tokyo.ac.jp/>