

Professional Training Program in International Agricultural Research

Professional Training Program in International Agricultural Research [Common Subjects (Compulsory)]

Course Number	Course Name	Course Type	Credits	Standard Academic Year	Course Offering Term	Weekday and Period	Classroom	Instructor	Course Overview	Remarks
01AB002	Writing Scientific Papers in English for Students of Agro-Bioresources Science and Technology	1	1.0	2	Fall IAB	Mon5		DeMar Taylor	Course will focus on the format of a scientific paper, how to prepare effective figures and tables and language conventions for more effective writing.	Required for students of the Training Program in International Agricultural Research. Lecture room: F506 Lectures taught in English
01AB003	Basic Study on Agro-bioresources Science and Technology for Foreign Students	1	1.0	1	Fall IAB	Wed1,2	2K156	Shin-ichi Kashiwabara, Naoto Ishikawa, Mitsutoshi Nakajima	The major focus of this program is to develop better understanding among foreign students studying Bioresources Science about the current picture of agriculture, forestry, and biotech industries in Japan. While tracing back to the technologies that have contributed to the development of agriculture, forestry, and biotech industries in Japan, the program will introduce their details and significance, and compare them with similar technologies in other countries. This program provides a series of opportunities to visit biotech industries, agricultural fields, research organizations, etc. and to exchange opinions with their supervisors. 1. Guidance 2. Visiting Agricultural and Forestry Research Center 3. Visiting Tsukuba Botanical Garden 4. Visiting National Institute 5. Visiting Factory 6. Joining International Symposium on Agricultural Education for Sustainable Development 7. Visiting Factory 8. Visiting Office of Environmental and Safety Management, Central District Laboratory Wastewater Purge System 9. Visiting Gene Research Center 10. Visiting TARA Center	Required for students of the Professional Training Program in International Agricultural Research, Agro-biological Sciences Field, Agricultural Economics and Sociology Field, Bioresource Environment Engineering Field, and Applied Biochemistry Field Lectures are conducted in English.

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Course Number	Course Name	Course Type	Credits	Standard Academic Year	Course Offering Term	Weekday and Period	Classroom	Instructor	Course Overview	Remarks
01AB756	Special Research Work II	6	3.0	2	Annual	by appointment		Yuichi Yamaoka, Sosaku Ichikawa	In this course, student will develop the knowledge on their own research topics related to the international agricultural research by reading and reviewing basic papers on this research field.	必修 Lectures are conducted in English.
01AB757	Special Research Work III	7	6.0	2	Annual	by appointment		Yuichi Yamaoka, Sosaku Ichikawa	The aim of the course is to learn knowledge and problem-solving skills on international agricultural research through a research in laboratories. The students select their theme from a variety of fields in international agricultural research.	必修 Lectures are conducted in English.

Course Number	Course Name	Course Type	Credits	Standard Academic Year	Course Offering Term	Weekday and Period	Classroom	Instructor	Course Overview	Remarks
01AB784	Special Research Work I	1	2.0	1	Annual	by appointment		Yuichi Yamaoka, Sosaku Ichikawa	Supervisor of each student will provide advanced research topics of specific research field related to the international agricultural research.	必修 Lectures are conducted in English.

Professional Training Program in International Agricultural Research [Program Elective Subjects]

Course Number	Course Name	Course Type	Credits	Standard Academic Year	Course Offering Term	Weekday and Period	Classroom	Instructor	Course Overview	Remarks
01AB764	Farming Systems	1	2.0	1, 2	SprAB	Thu1, 2	2K156	Hisayoshi Hayashi, Naoya Fukuda, Naoto Ishikawa, Morio Kato, Sachio Maruyama, Ryozi Noguchi, Yoshihiko Sekozawa, Tomohiro Takigawa, Daiki Mizuta	How should farming systems be implemented for not only economically profitable but also ecologically sustainable? An appropriate farming system in rice, vegetables, and fruit and livestock production areas must be needed to employ technology for environmental conservation and management, being coupled with uses of agricultural machine.	平成26年度以前入学生に限る。Room: 生農F106 Lectures are conducted in English.
01AB765	Conservation of Soil and Water Resources	1	2.0	1, 2	SprAB	Intensive	2K201	Yasuhisa Adachi	Introductory and fundamental lecture of colloid and interface science is given placing an emphasis on the application to soil and water, and bio-environmental engineering.	Introductory and fundamental lecture of colloid and interface science is given placing an emphasis on the application to soil and water, and bio-environmental engineering. Identical to 01AD222. Lectures are conducted in English. 4/11, 4/18, 4/25
01AB767	Rural Development Policy and Planning	1	2.0	1	FallAB	Intensive	2K156	Ryuichi Shigeno, Satoshi Tachibana, Yoshiro Higano, Taiichi Ito, Morio Kato, Ryozi Noguchi, Hisato Shuto, Shusuke MATSUSHITA	Rural development planning and execution methods including agriculture, forestry, agribusiness industry, rural life, and environmental protection are treated with emphasis on the community participation and sustainable development. The key issues are the needs prospect, public consensus and acceptance, prior and post cost-benefit evaluations.	平成26年度以前入学生に限る。Room: F106 Lectures are conducted in English.
01AB768	Basic Plant Biotechnology	1	2.0	1, 2	SprAB	Fri2, 3	2K156	Hiroshi Ezura, Hideki Aoyagi, Hiroshi Matsumoto, Sumiko Sugaya, Shigeki Yoshida, Tohru Ariizumi, Satoko Nonaka	As an interface between local and advanced technologies, lectures are given on fundamental biotechnology including plant cell and tissue culture, virus-technology, in vitro propagation, embryo rescue, haploid production, DNA marker, genetic transformation etc as well as present status of the application to science and industry.	Room: F106 Lectures are conducted in English.

Course Number	Course Name	Course Type	Credits	Standard Academic Year	Course Offering Term	Weekday and Period	Classroom	Instructor	Course Overview	Remarks
01AB769	Environmental Management Technology	1	2.0	1, 2	SprAB	Tue2, 3	2K156	Yooichi Kainoh, Zhen Ya Zhang, Nakao Nomura, Nobuhiko Nomura, Katsuyoshi Shimizu, Keiko Yamaji, Yingnan Yang, Takuma Genkawa, Toshiaki Nakajima-Kambe, Shigeru Matsuyama	In this class, the following two topics are presented. (1) the present state of contamination in soil and water environments by heavy metals, chemicals, pesticides, nitrate, and spilled oil, etc. (2) remediation technology using microorganisms and plants	Room: F106 Lectures are conducted in English.
01AB770	Appropriate Use of Genetic Resources	1	2.0	1, 2	FallAB	Tue3, 4	2K156	Yuichi Yamaoka, Ryo Ohsawa, Hitoshi Miyazaki, Atsushi Asano, Atsushi Tajima, Izumi Okane, Junichi P. Abe, Yasuhiro Ishiga, Hirokazu Handa, Yasunari Fujita, Makoto Kawase	In order to develop a sustainable farming system, the knowledge on appropriate use of the plant/animal genetic resources are essential. Based on the modern genetics and breeding theory, the present lecture covers following topics: 1) The methodology to explore, preserve and utilize local genetic resources. 2) The methodology to introduce suitable crops or new varieties to the local environment.	Room: F106 Lectures are conducted in English.
01AB771	Conservation and Sustainable Use of Biological Diversity	1	1.0	1, 2	SprAB	Tue4	2K156	Kazuo Watanabe	Conservation and sustainable use of biological diversity is one of the national strategic agenda at the 21st century and many forums have active discussion, especially at internationally legal-binding instruments. Under the international environment, overview is made on the conservation and sustainable use of biological diversity, emphasizing agricultural biological resources. Ethnological-social scientific aspects are also covered on the sustainable use of the biodiversity based on traditional/indigenous knowledge; lecture consideration is also provided on the protection of intellectual property associated with the genetic resources; and finally multidisciplinary academic approach is taken for the comprehension. Guest speakers will be invited from United Nations University and other institutions.	Room: 生農F106
01AB772	Ethics, Legal and Social Implication on Science and Technology	1	1.0	1, 2	SprAB	Tue5	2K156	Kazuo Watanabe	Holistic discussion is aimed on the ethics, legal and social implication on the science and technology. Not only on the application phases, is the understanding of ELSI urged on planning and conducting basic research and also on capacity building. It is essential to have the governance on science and technology in order to promote and attain the R&D, and ultimately to receive the public acceptance towards the regional development. Guest speakers will be invited from United Nations University and other institutions.	Room: 生農F106

Course Number	Course Name	Course Type	Credits	Standard Academic Year	Course Offering Term	Weekday and Period	Classroom	Instructor	Course Overview	Remarks
01AB773	Introduction to Sustainable Agriculture in Rural Areas	1	2.0	1, 2	Fall AB	Wed3, 4	2K156	Ahamed Tofael	This graduate course provides concepts and practices of sustainable agriculture in rural areas covering soil structure and fertility, sustainable water management, chemical application systems, site-specific management and decision support systems. The participatory rural appraisal for sustainable agricultural practices, supply and value chain analysis in agribusiness, and ICT planning in agriculture are core discussion topics. In addition, an innovative research project is also included for sustainable agricultural practices.	Room: 生農A206 Lectures are conducted in English.
01AB774	Concept of Sustainability Index	1	2.0	1, 2	Fall AB	Thu3, 4	2K156	Ahamed Tofael	This graduate course focuses on sustainability indicators covering maximum sustainable yield, ecosystems and development of sustainability indicators. The core topics include problem solving approaches, sustainability indicators in practice, project scenarios, logical frame works, concept diagrams, stakeholder's participation and coalition, and systematic sustainability analysis. A project is included to develop the indices to demonstrate contemporary regional issues: Environmental Sustainability Index (ESI), Food Security Index, Vulnerability and Coping Strategy Index. Furthermore, graduate students will be assigned to develop a logical frame work for their research as an exercise of system approaches.	Room: 生農A206 Lectures are conducted in English.
01AB785	Agricultural Research Methodology	1	2.0	1	Spr AB	Thu4, 5		Ahamed Tofael	The goal of this course is to provide sound understanding for producing of new knowledge, which takes three main forms: Exploratory research, which structures and identifies new problems. Constructive research, which develops solutions to a problem, and Empirical research, which tests the feasibility of a solution using empirical evidence. Hands on exercise will be given to improve the reasoning skills, emphasizing agricultural problems and issues. The course covers research methods within these three forms with basic knowledge of research methodology and a comprehensive research proposal for the Master's thesis.	Room: 生農A206 Lectures are conducted in English.
01AB368	Basic and applied science for global food security	1	1.0	1	Annual	by appointment		Miyako Kusano	Food security research has to be accelerated against global food crisis, which is going to be a serious issue in near future. Firstly, we provide general introductions for understanding of current status of food security research. Then specific research topics and cutting-age techniques are introduced to obtain knowledge for food security research.	Required for students of the Global Food Security Course. Lectures are conducted in English. Lectures are conducted in English.