

9. Website	(1) Graduate School of Life and Environmental Sciences Professional Training Program in International Agricultural Research http://www.global.tsukuba.ac.jp/masters/agresearch.html (2) University of Tsukuba http://www.tsukuba.ac.jp/english/	
10. Professors and Associated Professors	Name	Research Subject, Contact (e-mail), Special message for the Future students
		Please see Annex 3 「Professional Training Program in International Agricultural Research」
11. Features of University	Please see Annex1 「2. Features of University」	
12. Features of Graduate School	Please see Annex1 「3. Features of Graduate School」	
13. Features and Curriculum of Program	Please see Annex2 「Master’s Program in Agro-Bioresources Science and Technology」	
14. Academic Schedule	Please see Annex1 「5. Academic Schedule」	
15. Supporting service to International Students		
International Students Support Center for Consulting or counseling about daily life, campus life, cross-cultural adjustment etc.	International Student Center Advisory Section of the International Student Center provides general counseling and consultation services for all international students in order to help them cope with issues they encounter in their academic and daily life. The section also provides support for tutors and academic advisors in matters related to international students. We deliver orientation sessions several times a year for new students and their tutors. Furthermore, we hold workshops on multicultural/cross-cultural issues in order to promote internationalization on campus and to advocate for international students.	
	University Health Center The University Health Center is open from 9am to 5pm, except on Saturdays, Sundays, national holidays, and holidays at the beginning. University affiliates (e.g., foreign students, researchers) have access to the health center facilities and free consultations. The center may also assist students in finding other medical institutions if necessary. Such cases require a health insurance card, and it is therefore recommended that students obtain a “National Health Insurance Card” after their arrival in Japan. Please refer to the following website for the further information: http://www.intersc.tsukuba.ac.jp/~kyoten/	
Provision of Student Dormitory	The University of Tsukuba provides single and family residences for both Japanese and international students. A total of 60 residence halls with 3,599 single and 250 family rooms are located in the southern (Hirasuna, Oikoshi) and northern (Ichinoya and Ichinoya Minami) areas of the main campus and on the Kasuga Campus. Please note that non-degree students are not allowed to move into family rooms. Please refer to the following website for the further information: https://www.tsukuba.ac.jp/english/campuslife/healthlife.html	

<p>Japanese Language Education Program for International Students</p>	<p>Japanese language courses are offered by the International Student Center in accordance with each student's proficiency in Japanese. The 15-week Comprehensive Japanese Courses (beginner, elementary, intermediate, advanced) will be available.</p> <p>Please refer to the following website for the further information: http://www.global.tsukuba.ac.jp/support/language-training</p>
<p>Cultural Activities</p>	<p>The University organize short trips every year during summer holidays. These trips are designed to promote an understanding of Japanese history and culture among international students by visiting places of historic interest and factories in various districts. Local groups also organize a variety of exchange meetings, parties, bazaars, events, and homestay programs, where international students will have opportunities to interact with local groups and residents.</p> <p>Please refer to the following website for the further information: http://www.global.tsukuba.ac.jp/tag-aims/asean-cafe</p>
<p>Any special attention to Religious Practice</p>	<p>University of Tsukuba has restaurants that specifically offer halal food.</p>
<p>facilities (Library etc)</p>	<p>Information on the University Library is available on the website below. Regarding other welfare facilities, please see the following website: http://www.tsukuba.ac.jp/english/campuslife/recreations.html https://www.tulips.tsukuba.ac.jp/lib/en</p>
<p>Please state other particular supporting service you are endeavoring, if any.</p>	<p>The University of Tsukuba Support Association for International Students enables international students to rent private apartments by becoming their joint guarantor when making a lease contract. Applicants to this service are examined under certain conditions such as joining the “Comprehensive Renters Insurance for Foreign Students Studying in Japan” system.</p> <p>Please refer to the following website for the further information: http://www.global.tsukuba.ac.jp/isc/support?language=en</p>
<p>16. Message to Prospective International Students</p>	
<p>Message from University</p>	<p>http://www.global.tsukuba.ac.jp/president</p>
<p>Voice of International Students</p>	

2. Features of University

Our university was established in October 1973, due to the relocation of its antecedent, the Tokyo University of Education, to the Tsukuba area. As the first comprehensive university in Japan to be established under a country-wide university reform plan, the University has featured "Openness" with "New Systems for Education and Research" under a "New University Administration." The university reform plays a major role in our continuing effort for improvement. We are striving to create a unique, active, and internationally competitive university with superlative education and research facilities.

The University of Tsukuba aims to establish free exchange and close relationships in both basic and applied sciences with educational and research organizations and academic communities in Japan and overseas. While developing these relationships, we intend to pursue education and research to cultivate men and women with creative intelligence and rich human qualities.

The University of Tsukuba endeavors to contribute to the progress of science and culture. Formerly, Japanese universities tended to remain cloistered in their own narrow, specialized fields, creating polarization, stagnation in education and research and alienation from their communities.

The University of Tsukuba has decided to function as a university which is open to all within and outside of Japan. Toward this end, the university has made it its goal to develop an organization better suiting the functions and administration with a new concept of education and research highly international in character, rich in diversity and flexibility and capable of dealing sensitively with the changes occurring in contemporary society.

To realize this, it has vested in its staff and administrative authorities the powers necessary to carry out these responsibilities.

The University of Tsukuba aims to be an open university in all aspects and we are a frontrunner in the university reform in Japan. Our fundamental principle is to create a flexible education and research structure as well as a university system to meet the needs of the next generation. We aspire to be a comprehensive university, continuously meeting new challenges and developing new areas. The foremost mission of a university is to provide an environment that allows future leaders to realize their potential in full. The University of Tsukuba gives students the opportunity develop their individuality and skills through an education that is backed by cutting-edge research. Toward this end, we set the following goals.

1. We aim to actively expand interdisciplinary and integrative approaches to education research, further specialized expertise and produce distinguished research.
2. We aim to provide an environment that allows future leaders to realize their potential in full and gives them the opportunity to develop their individuality and skills through education that is backed by cutting-edge research.
3. As the core of Tsukuba Science City with its concentration of scientific research institutes, we aim to promote collaboration among industry, academia and government, and actively contribute to society while continuing to strengthen our education and research capacity.
4. Promotion of basic and applied researches with scientific and social values, and researches contributing to the inheritance of science and culture to the next generation
5. Our university has links with countries and regions all over the world and we aim to become a university with high international reputation and influence by actively promoting world-class education and research activities and collaborative interaction.
6. We take the initiative in university reform through collaborative work between staff and faculty members and valuing their individuality and abilities.



Tsukuba is one of the top ranked universities in Japan

The University of Tsukuba is consistently ranked in Japan's top 10 universities, and in the top 200 worldwide (QS Worldwide rankings). The University has produced three Nobel prize winning scientists. We have particular strengths in the natural sciences, while our School of Social and International Studies was ranked #1 in Japan in 2010 by Toyokeizai (Eastern Economics) magazine.

Tsukuba science city is Japan's top academic environment

Tsukuba was created to become Japan's science and technology city. Currently, over 200 private research organizations and approximately 60 public research organizations call Tsukuba home. Approximately half of Japan's research funding is spent in Tsukuba, and over 15,000 PhD scientists are employed in the city. The city was recently named as Japan's robotics and nanotechnology hub, with new research facilities planned.

Tsukuba is just 45 minutes from central Tokyo

The Tsukuba Express runs from Tsukuba center to Akihabara in central Tokyo. The trains operate on three different schedules - local trains take 56 minutes, while express trains take only 45 minutes. Tsukuba is one of Japan's youngest and most rapidly developing cities. Since the completion of the Tsukuba express, and the increased convenience of visiting Tokyo which that brings, Tsukuba has seen a huge amount of development. In 2011 the city hall moved to Kenkyu-gakuen, near the new areas mall, and a huge number of new shopping and residential areas are being developed. Tsukuba's population is young by national standards, mainly due to the large concentration of educational and research institutes in the city.

Tsukuba has an internationally diverse, welcoming and friendly citizenry

Approximately 7,500 of Tsukuba's 220,000 residents hail from overseas, with around 2000 of these studying or working at the University. The percentage of foreign residents is one of the highest for any Japanese city, making Tsukuba a friendly, welcoming place for international students. The city provides a wide range of services in English, including residents services, a weekly legal consultation, lists of medical care facilities which provide multilingual support, and also cultural and educational activities helping Japanese and non-Japanese residents meet. There are over 1-70 residents subscribed to the "News for Tsukuba residents" Facebook page, while the International Student Association (TISA) is one of the biggest student clubs in the university.



3. Features of Graduate School

The aim of this program is to develop capacity and leadership through on-the-job training (OJT), especially by the collaborative internship at the international research institutes with CIGR. The University of Tsukuba seeks students who are interested to study in the area of agriculture, food processing, agricultural economics, applied biochemistry and aim to develop leading edge technology to solve the current problems of agricultural research throughout the world. To complete the course, a total of 30 credits from various subjects and a dissertation are required. Supervision for the Master's thesis is conducted by the members of the program who have experiences and research in relevant areas.

Chairman's Message

Professor Yuichi YAMAOKA,

Chairman of the Master's Program in Agro-bioresources Science and Technology

We would like to welcome international students to take the opportunity to study in the Professional Training Program in International Agricultural Research, Master's Program in Agro-bioresources Science and Technology. The aim of this program is human resource development through on-the-job training (OJT) in agricultural sectors. The training will be done with collaborative internship at the international research institutes under CIGR, oriented toward professionals with inter-disciplinary expertise in the advanced scientific fields of food, environment and bio-resources utilization.



This course shares subjects developed in collaboration with JICA, and partner universities including the preparatory and depth subjects. To complete the course, a total of 30 credits from various subjects covering field of agricultural productions, management, biotechnology and forest resources and a dissertation are required. Supervision for the master's thesis is conducted by the members of our Master's Program having appropriate experiences and research records, which is helpful for the students to complete the master's course successfully.

Graduate students in this program can master the basics of advanced agricultural research from long-term internship at international agricultural research institutes and partner universities. Master's Program curriculum includes subjects developed under the collaboration with the partner universities in Asia, the Pacific and Africa. At this moment we have e-learning course works with nine leading Universities in Asia. In addition, Agricultural and Forest Research Center, University of Tsukuba provides the internship facilities on campus.

4. Features of the Program and Curriculum in each Field of Study

Research Students (kenkyusei) will proceed the following things before entering the Master course:

1. Adaptation to a lifestyle of Japan
2. Improvement in communication skill
3. Acquisition of fundamental Japanese
4. Improvement in the basic scholarship on the area of your research field
5. Setup of your research task by a periodical arrangement with your supervisor

Master Course

Professional Training Program in International Agricultural Research

Basic Subject Matter (1 unit from the following two subjects)(A1)

Course Number	Course Name	Credits	Year Usually taken	Semester	Sceduling	Staff
01AB002	Writing Scientific Papers in English for Students of Agro-Bioresources Science and Technology	1.0	1, 2	FallAB	Mon5	DeMar Taylor, Natsuko Kinoshita
01AB003	Basic Study on Agro-bioresources Science and Technology for Foreign Students	1.0	1	FallAB	Wed1, 2	Shin-ichi Kashiwabara, Atsushi Tajima

Program Common Subject Matter (Compulsory) (C1)

Course Number	Course Name	Credits	Year Usually taken	Semester	Sceduling	Staff
01AB784	Special Research Work I	2.0	1	Annual	by appointment	Yuichi Yamaoka, Sosaku Ichikawa
01AB756	Special Research Work II	3.0	2	Annual	by appointment	Yuichi Yamaoka, Sosaku Ichikawa
01AB757	Special Research Work III	6.0	2	Annual	by appointment	Yuichi Yamaoka, Sosaku Ichikawa
01AB758	Capacity Development	1.0	1, 2	FallC	Intensive	Hana Kobayashi
01AB760	Gender in Rural Development	1.0	1, 2	FallC	Intensive	Hana Kobayashi

Program Elective Subject Matter (D1)

Course Number	Course Name	Credits	Year Usually taken	Semester	Sceduling	Staff
01AB765	Conservation of Soil and Water Resources	2.0	1, 2	SprAB	Intensive	Yasuhisa Adachi
01AB767	Rural Development Policy and Planning	2.0	1	FallAB	Intensive	Ryuichi Shigeno, Satoshi Tachibana, Yoshiro Higano, Taiichi Ito, Morio Kato, Ryoza Noguchi, Hisato Shuto, Shusuke Matsushita
01AB768	Basic Plant Biotechnology	2.0	1, 2	SprAB	Fri2,3	Hiroshi Ezura, Hideki Aoyagi, Hiroshi Matsumoto, Sumiko Sugaya, Shigeki Yoshida, Tohru Ariizumi, Satoko Nonaka

01AB769	Environmental Management Technology	2.0	1, 2	SprAB	Tue2,3	Yooichi Kainoh,Zhen Ya Zhang,Nakao Nomura,Nobuhiko Nomura,Keiko Yamaji,Yingnan Yang,Takuma Genkawa,Toshiaki Nakajima-Kambe,Shigeru Matsuyama,Kiyokazu Kawada
01AB770	Appropriate Use of Genetic Resources	2.0	1, 2	FallAB	Tue3,4	Yuichi Yamaoka,Ryo Ohsawa,Hitoshi Miyazaki,Atsushi Asano,Atsushi Tajima,Izumi Okane,Junichi P. Abe,Yasuhiro Ishiga,Yasunari Fujita,Makoto Kawase
01AB771	Conservation and Sustainable Use of Biological Diversity	1.0	1, 2	SprAB	Tue4	Kazuo Watanabe
01AB772	Ethics, Legal and Social Implication on Science and Technology	1.0	1, 2	SprAB	Tue5	Kazuo Watanabe
01AB773	Introduction to Sustainable Agriculture in Rural Areas	2.0	1, 2	FallAB	Wed3,4	Ahamed Tofael
01AB774	Concept of Sustainability Index	2.0	1, 2	FallAB	Thu3,4	Ahamed Tofael
01AB785	Agricultural Research Methodology	2.0	1	SprAB	Thu4,5	Ahamed Tofael
01AB368	Basic and applied science for global food security	1.0	1	SprC	Wed1,2	Miyako Kusano

5. Academic Schedule

Academic Calendar 2017 – 2018

Events	Graduates School
Spring Semester (April 1, 2017 - September 30, 2017)	
First day of the academic year	Saturday, April 1
Spring recess	Saturday, April 1 - Thursday, April 6
Entrance Ceremony	Friday, April 7
Freshman / New students orientation	Monday, April 10
Spring Semester Classes begin	Tuesday, April 11
Spring Sports Day	Mid May
Spring modules A and B final examination week	Tuesday, June 27 - Monday, July 3
Spring modules A, B, and C final examination week	Wednesday, August 2 - Tuesday, August 8
Spring semester Classes end	Tuesday, August 8
Supplementary dates for final examination	Wednesday, August 9
Summer recess	Thursday, August 10 - Saturday September 30
Fall Semester (October 1, 2017 - March 31, 2018)	
Events	Graduates School
Entrance ceremony for fall semester	Late September
University Foundation Anniversary	Sunday, October 1
Fall semester classes begin	Monday, October 2
Campus-wide power outage (Tsukuba campus)	Late October
University Festival	Friday, November 3 - Sunday November 5
Autumn Sports day	Mid November
Fall Modules A and B final examination week	Wednesday, December 20, - Tuesday December 26 (Note: The term exam on 23rd Dec, National Holiday, will be held on 16th December in advance.)
Winter recess	Wednesday, December 27 - Monday, January 8
Fall modules A, B, and C final examination week	Monday, February 5 - Thursday, February 15
Fall semester classes end	Thursday, February 15
Supplementary dates for final examination	Friday, February 16
Spring recess	Saturday, February 17 - Saturday, March 31
Graduate school commencement ceremony	Friday, March 23
Last day of academic year	Saturday, March 31

Master's Program in Agro-Bioresources Science and Technology

The two-year Master's Program in Agro-Bioresources Science and Technology is comprised of four main research fields covering a wide range of disciplines, with as many as 66 individual specialties. The four main research fields are Agro-biological Sciences, Agricultural Economics and Sociology, Bioresource Environmental Engineering, and Applied Biochemistry. In addition, a special master's degree is offered as the Biosystem Sciences Course (see next section).

The program aims both to provide fundamental knowledge of comprehensive life sciences including agriculture, biology, and environmental sciences as a prerequisite for further study in a three-year doctoral course, and to provide the wide spectrum of practical skills in technologies needed to succeed as a professional in the area. The Biosystem Sciences Course was established to train graduates with practical knowledge and skills for success in bio-industry.

In addition, the Professional Training Program in International Agricultural Research was established in August 2010 as part of the Project for Establishing Universities for Internationalization (Global 30). Students involved in this program receive priority for entry into a doctoral program after completion of the master's course. The fields of research of the faculty members are listed in the table below.

(* E-mail address: add following domain name: @u.tsukuba.ac.jp . Or replace “#” with “@” .)

	Field of	Faculty	Detailed Description of Research Field
Agro-biological Sciences Field	Plant Breeding	OHSAWA Ryo osawa.ryo.gt@ YOSHIOKA Yosuke yoshioka.yosuke.fw@ TSUDA Mai Tsuda.mai.fu@	① Study on conservation and efficient utilization of genetic resources ② Genetic analysis of important traits in crops ③ Pollination biology for seed multiplication of crops ④ Development of digital phenotyping method
	Crop Science	※ MARUYAMA Sachio maruyama.sachio.ge@ NOMURA Koji nomura.koji.gb@	① Physiological and ecological research for raising grain yield and quality of crop plants ② Physiological research on the mechanisms and control of stress tolerance in crop plants
	Olericulture and Floriculture	EZURA Hiroshi ezura.hiroshi.fa@ FUKUDA Naoya fukuda.naoya.ka@ MATSUKURA Chiaki matsukura.chiaki.fw@ ARIIZUMI Tohru ariizumi#@#gene.tsukuba.ac.jp KANG Seung Won kang.seungwon.ga@ NONAKA Satoko nonaka#@#gene.tsukuba.ac.jp	① Molecular and physiological dissections of useful traits involved in agricultural production in vegetables and ornamentals ② Development of genetic engineering and intensive production technologies for vegetables and ornamentals ③ Genetics and genomics for fleshy fruit (Solanaceae and Cucurbitaceae) research and development
	Pomology and Postharvest Physiology of Fruits	SUGAYA Sumiko sugaya.sumiko.fw@ SEKOZAWA Yoshihiko sekozawa.yoshihik.ga@	① Study on physiological, biochemical, and molecular mechanisms of fruit maturation and bud dormancy of the fruit tree ② Study on postharvest physiology of fruit ③ Study on the effects of environmental stress on reproduction and fruit production of fruit tree
	Animal Science	TAJIMA Atsushi tajima.atsushi.gb@ ISHIKAWA Naoto ishikawa.naoto.ke@ ASANO Atsushi asano.atsushi.ft@	① Studies on reproduction and their applications for the conservation of animal genetic resources. ② Holistic approaches toward the development of sustainable animal production system. ③ Development of the novel healthy lean meat production system.

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Crop Production System	HAYASHI Hisayoshi hayashi.hisayoshi.gf@	<ul style="list-style-type: none"> ① Establishment of sustainable crop production systems with conscious of environment load ② Development and utilization of high level and stable production systems on millets regional special crops ③ Development of production systems in the viewpoint of productivity and quality of forage rice ④ Development and evaluation of food education systems in formal and continuing education
Applied Science of Food Resources	ISODA Hiroko isoda.hiroko.ga@	<ul style="list-style-type: none"> ① International research on the function analysis and the effective utilization of food resources ② Food components on the functional food and cosmetic seeds ③ Development of food and environmental risk assessment
Plant Molecular Biology	SHIBA Hiroshi shiba.hiroshi.gm@	<ul style="list-style-type: none"> ① Molecular mechanisms of epigenetic regulation in heterosis ② Molecular mechanisms of epigenetic regulation in sexual plant reproduction ③ Epigenetic engineering of plant development

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	Field of	Faculty	Detailed Description of Research Field
Aerobiological Sciences Field	Metabolic Network Biology	KUSANO Miyako kusano.miyako.fp@ WANG Ning wang.ning.fu@	① Genetic analysis of important agronomic traits in crops and vegetables ② Development of analytical platforms to capture quantitative and qualitative changes of metabolite levels ③ Metabolic network biology using “omics” Datasets
	Disease Vector Control	TAYLOR, DeMar taylor.de.mar.ge@	① Hormonal and nutritional regulation of reproduction in ticks and other arthropods ② Immune responses and their regulatory mechanisms in ticks and other arthropods ③ Effects of nutrition and immune regulatory mechanisms on the vector capacity of ticks
	Plant Parasitic Mycology	YAMAOKA Yuichi yamaoka.yuichi.gp@ OKANE Izumi okane.izumi.fw@ ISHIGA Yasuhiro ishiga.yasuhiro.km@	① Systematics of plant parasitic fungi including symbiotic fungi, particularly rust fungi, blue stain fungi, endopytes and mycorrhizal fungi. ② Studies on ecology and physiology of these fungi. ③ Functional analysis of genes associated with disease resistance in plant.
	Applied Entomology and Zoology	KAINOH Yooichi kainoh.yooichi.gf@ FURUKAWA Seiichi furukawa.seiichi.ew@	① Biological control and chemical ecological approaches in pest management ② Insect immune mechanisms against pathogens and parasitoids ③ Elucidating volatile compound-mediated plant-plant and plant-insect communications using molecular biology approaches
	Forest Ecotopology	KAMIJYO Takashi kamijo.takashi.fw@ KAWADA Kiyokazu kawada.kiyokazu.gu@	① Dynamics and function of forest ecosystem ② Vegetation science and management ③ Conservation and restoration of arid and semi-arid ecosystem ④ Conservation of endangered species
	Conservation of Regional Resources	TSUMURA Yoshihiko tsumura.yoshihiko.ke@ FUJIOKA Masahiro fujioka.masahiro.gn@ SEINO Tatsuyuki seino.tatsuyuki.gw@	① Conservation genetics of tropical tree species, and phylogeography of forest tree species and genetic study of local adaptation ② Study on conservation of regional resources ③ Wildlife management and biodiversity conservation

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Epigenetics	BUZAS Diana Mihaela buzas.mihaela.ka@	① The role of DRE2 in stress responses in Arabidopsis. ② Characterization of the role of iron metabolism and iron-sulfur cluster biogenesis components in maternal gene activation in the central cell gamete. ③ Physiological studies of vernalisation in perennial crucifers.
Functional Analysis of Agro-forest Microorganisms	*HATTORI Tsutomu hattori#@@affrc.go.jp (Forestry and Forest Products Research Institute(FFPRI))	① Studies on wood decay mechanisms, ecology and physiology of wood decaying fungi ② Studies on effects of forest managements on wood-inhabiting fungi ③ Studies on taxonomy and phylogeny of wood decaying fungi
Plant Stress Biology	*FUJITA Yasunari yasuf#@@affrc.go.jp (Japan International Res. Center for Agricultural Sci. (JIRCAS))	① Molecular elucidation of stress tolerance mechanisms in plants ② Development of environmental stress-tolerant crops
International Food Production and Development Sciences	*MURANAKA Satoru smuranaka#@@affrc.go.jp (Japan International Res. Center for Agricultural Sci. (JIRCAS))	① Morphological and physiological characterization of cowpea breeding materials for the development of machine-harvestable varieties. ② Physiological mechanism of tuber initiation and growth of White Guinea yam, <i>Dioscorea rotundata</i> .
Functional Utilization of Beneficial Insects	*KIMURA Kiyoshi kimura#@@affrc.go.jp (NARO Institute of Livestock and Grassland Science (NILGS))	① Improvement of Honeybee health for the advancement of apiculture ② Genetic improvement in characteristics of honeybees to contribute to apiculture ③ Research on characterization and utilization of pollinator insects
Climate Change Impact Assessment on Vegetation	*MATSUI Tetsuya tematsui#@@affrc.go.jp (Forestry and Forest Products Research Institute(FFPRI))	① Relations between distributions of forest vegetation and climatic conditions ② Impact assessment and adaptation planning of climate change on forest ecosystem functions and ecosystem services ③ Ecological study on the beech forests at their northern natural range limit

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	Field of	Faculty	Detailed Description of Research Field
Agricultural Economics and Sociology Field	Agricultural and Bioresource Economics	SHIGENO Ryuichi shigeno.ryuichi.gb#@#u.tsukuba.ac.jp SHUTO Hisato shuto.hisato.ke#@#u.tsukuba.ac.jp	① Agricultural policy and economic development in the globalized world economy ② Quantitative analysis of food demand ③ Industrial organization of agribusiness
	Resource Management and Development Studies	MATSUSHITA Shusuke matsushita.shusuk.gb#@#u.tsukuba.ac.jp	① Development of Decision Support System for Farm Management Agency ② Analysis of Risk Management and Consumers' Behavior on Agricultural Products and Food ③ The Possibility and Extension of Smart Agriculture for Farm Management and Food Distribution System
	Farm Business and Agribusiness Management	NOHGUCHI Ruriko nohguchi.ruriko.fw#@#u.tsukuba.ac.jp UJIE Kiyokazu ujiie.kiyokazu.gf#@#u.tsukuba.ac.jp	① Farm production and supply economics under the risk ② Farm and agribusiness firm management and marketing ③ Food consumption and consumer policy
	Rural Sociology and Agricultural History	KATO Morihiro kato.morihiro.ft#@#u.tsukuba.ac.jp YUZAWA Noriko yuzawa.noriko.gw#@#u.tsukuba.ac.jp	① Historical study on agriculture and rural communities of Japan ② Study on 17-19 th centuries manuals of agricultural technology
	Forest Resource Economics	TACHIBANA Satoshi tachibana.satoshi.gn#@#u.tsukuba.ac.jp	① Study on forest economics and policy ② International comparative study on management and utilization of forest resources ③ International comparative study on production and marketing of forest products
	Forest Resources Sociology	KOHROKI Katsuhisa kohroki.katsuhisa.gu#@#u.tsukuba.ac.jp	① Historical study of forest management in Japan ② Socioeconomic study on regional forest management in Japan ③ Comparative study on forestry organizations
	Rural Development Study	*FURUYA Jun furuya#@#affrc.go.jp KOBAYASHI Shintaro (Japan International Res. Center for Agricultural Sci.(JIRCAS))	① Identification of the socio-economic factors and conditions for sustainable agriculture development in the Asian and African countries ② World food model analysis, impacts of global warming on agriculture and food security
	Regional Forest Resource Development	*HIRANO Yuichiro hiranoy#@#affrc.go.jp (Forestry and Forest Products Research Institute (FFPRI))	① Identification of social conflicts over forest resources ② Study on how to lead rural development by utilizing forest resources

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Bioresource Environment Engineering Field	Food Resources Engineering	※ NAKAJIMA Mitsutoshi nakajima.m.fu#@#u.tsukuba.ac.jp Marcos Antonio das NEVES marcos.neves.ga#@#u.tsukuba.ac.jp	<ul style="list-style-type: none"> ① Micro / nano-engineering for advanced bioresource processing ② Micro/ nano-channel technology for advanced food processing ③ Formulation of food micro /nano-dispersions and evaluation of their gastrointestinal digestion ④ Effective utilization of food processing waste for value addition
	Environmental Colloid and Interface Engineering	ADACHI Yasuhisa adachi.yasuhisa.gu#@#u.tsukuba.ac.jp KOBAYASHI Motoyoshi kobayashi.moto.fp#@#u.tsukuba.ac.jp	<ul style="list-style-type: none"> ① Water and solute transportation in soil. Salinity and erosion of soil ② Water resource engineering in arid land, water quality control, water treatment ③ Physics and chemistry of soil, soil pollution, colloid and interface
	Bio - resource Process and System Engineering	NOGUCHI Ryozo noguchi.ryozo.gm#@#u.tsukuba.ac.jp	<ul style="list-style-type: none"> ① Resource and energy utilization using agricultural waste, biomass and organic wastewater based on bio-resource recycling system ② LCA, LCC, and simulator development for optimization design of bio-resource conversion process and grasping of biomass potential and its utilization

	Field of	Faculty	Detailed Description of Research Field
Bioresourc Environment Engineering Field	Watershed Conservation	NASAHARA (NISHIDA)Kenlo 24dakenlo#@gmail.com HOTTA Norifumi hotta.norifumi.ge#@u.tsukuba.ac.jp YAMAKAWA Yosuke yamakawa.yosuke.ga#@u.tsukuba.ac.jp	① Mechanism of sediment production and transport ② Sabo planning in harmony with natural environment ③ Watershed management planning
	Water Resources Management Engineering	ISHII Astushi ishii.atsushi.fu#@u.tsukuba.ac.jp	① Development and management of irrigation systems ② Water resources evaluation for development ③ Participatory irrigation management
	Farmland System Engineering	KOBAYASHI Motoyoshi kobayashi.moto.fp#@u.tsukuba.ac.jp YAMASHITA Yuji yamashita.yuji.gm#@u.tsukuba.ac.jp	① Farmland engineering, soil conservation engineering ② Soil Physics, Environmental materials
	Bioproduction and Machinery	TAKIGAWA Tomohiro tomohiro-takigawa.ff#@u.tsukuba.ac.jp NOGUCHI Ryozo noguchi.ryozo.gm#@u.tsukuba.ac.jp Tofael AHAMED tofael.ahamed.gp#@u.tsukuba.ac.jp GENKAWA Takuma genkawa.takuma.fm#@u.tsukuba.ac.jp	① Intelligent machinery and robotics for agricultural production ② System analysis for bioenergy production and utilization ③ Real-time crop monitoring systems for site-specific management ④ Process analytical technology for postharvest engineering using spectroscopy
	Protected Area and Wildlife Management	ITO Taiichi ito.taiichi.ft#@u.tsukuba.ac.jp SAKATA Keisuke sakata.keisuke.gn#@u.tsukuba.ac.jp	① Ideas behind protected areas ② Planning methods of natural areas ③ Management of recreational use ④ Wildlife management in protected areas
	Rural Environment Improvement	*TARUYA Hiroyuki taruya#@affrc.go.jp (National Inst. for Rural Engineering)	① Planning methodology for improving the productive function and living environment in rural and semi-mountainous areas ② Evaluation technologies for hydrological and ecological environment in rural areas
	Biosphere Informatic Control Engineering	* MOTOBAYASHI Kota kmoto#@affrc.go.jp (Institute of Agricultural Machinery, NARO)	① Fundamental technologies for agricultural machinery ② Advanced informatic and communication technologies (ICT) for agricultural machinery
	Agri-Food Process Engineering	KITAMURA Yutaka kitamura.yutaka.fm#@u.tsukuba.ac.jp	① Removal of food hazard by wet milling ② Milling of components related to health function By spray dry ③ Development of novel food by applying rice slurry
	Chemistry of Biomaterials	OHI Hiroshi oi.hiroshi.gm#@u.tsukuba.ac.jp NAKAGAWA-IZUMI Akiko nakagawa-izumi.a.gm#@u.tsukuba.ac.jp	① Chemistry for wood pulping and pulp bleaching ② Chemical utilization of biomaterials and bio-refinery ③ Micro-analysis of wood components (lignin, tannin, carbohydrate and others) and the related compounds

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	Field of Research	Faculty	Detailed Description of Research Field
Bioresourc Environment Engineering Field	Engineering of Biomaterials	ENOMAE Toshiharu t#@#enomae.com OBATAYA Eiichi obataya.eiichi.fu#@#u.tsukuba.ac.jp KAJIYAMA Mikio kajiyama.mikio.fp#@#u.tsukuba.ac.jp	① Creation of paper-based electronics maintaining general paper functions ② Development of paper sensors by using capillary liquid transport through fiber network ③ Comparison between electronic and paper media in educational effects ④ Synthesis of fluorine containing condensation polymers for composite materials ⑤ Chemical modification of poly (amino acid) and poly saccharides ⑥ Property enhancement of biomaterials for high-performance musical instruments ⑦ Investigation on the mechanical properties of wood with respect to its fiber-reinforced cellular structure, and development of technology for their effective utilization ⑧ Physical and chemical characterization of natural adhesives such as Japanese lacquer and chitosan, and development of technology for their utilization
	Food Development Science	*() (National Food Res. Inst.)	① Fluorescence finger print and its imaging technology for identification, discrimination, quantification and visualization on foods. ② Direct gel conversion technology of grain for new processing foods.
	Nano and Micro-scale Food Analysis	*TODORIKI Setsuko setsuko#@#affrc.go.jp (National Food Res. Inst.)	① Microbial control of food with ionizing radiation. ② Quality changes of food components by oxidative stresses.
	Sustainability of Biomass Resources	*KOSUGI Akihiko akosugi#@#affrc.go.jp (Japan International Res. Center for Agricultural Sci. (JIRCAS))	① Development of biomass utilization technology using microbial function
	Regional Forest Resource Development	*YAMADA Tatsuhiko yamadat#@#affrc.go.jp (Forest & Forest Products Res. Inst)	① Development of lignin based functional bio-materials ② Chemical conversion of cellulosic biomass for preparing useful chemicals, liquid fuels and fuel additives ③ Rapid analysis of lignocellulosics to evaluate potential of forest biomass

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Applied Biochemistry Field	Biochemistry of Bioactive Molecules	MATSUMOTO Hiroshi hmatsu#@#biol.tsukuba.ac.jp USUI Takeo	<ul style="list-style-type: none"> ① Identification of molecular targets of the bioactive compounds in mammalian and plant cells and their action mechanisms ② Antioxidative responses to photooxidative stresses ③ Biosynthesis of aroma compounds ④ Semiochemicals mediating interactions among insects, plants and animals
	Genomic Biology	FUKAMIZU Akiyoshi TANIMOTO Keiji	<ul style="list-style-type: none"> ① Functional studies on molecular network of transcription factors and chemical modifications ② Aging regulated by nutrition and metabolism ③ Brain function and metabolism ④ Genomic imprinting ⑤ Gene expression mechanism for homeostasis
	Structural Biochemistry	TANAKA Toshiyuki ttanaka#@#tara.tsukuba.ac.jp	<ul style="list-style-type: none"> ① Analysis of the structure-function relationships of proteins involved in signal transduction and transcription regulation ② Analysis of the chromophore-protein interactions of chromoprotein antitumor antibiotics ③ Protein engineering based on detailed structural information on functional proteins

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	Field of Research	Faculty	Detailed Description of Research Field
Applied Biochemistry Field	Molecular Microbial Bioengineering	KOBAYASHI Michihiko HASHIMOTO Yoshiteru	① Screening of new metabolism, and functional analysis of physiological functions ② Metabolic engineering and screening/ analysis/ design/ remodeling of useful enzymes and genes ③ Functional analysis of enzymes involved in cleavage and synthesis of a C-N bond and their molecular evolution ④ Development of super biological catalysts with novel functions of microorganisms and their enzymes ⑤ Functional analysis of nucleic acid-related enzymes and its application to DNA/RNA engineering
	Molecular Analysis of Signaling	*() (NARO)	① Molecular analysis of transcriptional regulation involved in disease resistance in rice ② Molecular analysis of signaling crosstalks in induced disease resistance in rice ③ Development of epigenetic strategies to control disease resistance
	Biochemistry of Plant Proteins	*() (NARO)	① Proteome analysis of plant under environmental stresses ② Functional analysis of crop seedling under flooding stress using comprehensive approach ③ Identification of flooding responsive protein-protein interaction in crop ④ Development of creation technology for transgenic crops and application to mechanism clarification research
	Animal Bioresource Engineering	*OGURA Atsuo *INOUE Kimiko (RIKEN)	① Characterization of the germ cell genome using a nuclear transfer technique ② Analysis of the mechanisms for zygotic gene activation using a nuclear transfer technique ③ Development of techniques for preservation of male germ cells using microinsemination
	Bioreaction Engineering	ICHIKAWA Sosaku	① Application of polymolecular aggregates for bioprocesses ② Production of useful materials by enzymes and microorganisms
	Applied Microbiology	NOMURA Nobuhiko nomura.nobuhiko.ge#@#u.tsukuba.ac.jp	① Bacterial cell-cell communication and biofilm formation

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	Cell Cultivation Engineering	AOYAGI Hideki aoyagi.hideki.ge#@#u.tsukuba.ac.jp	<ul style="list-style-type: none"> ① Development of cultivation system for cell and protoplast with novel functional activities and their biotechnological application ② Analysis of naturally-occurring microbial symbiotic association, construction of artificial symbiotic system and their application for various bioprocesses ③ Cell cultivation engineering and development of novel bioreactors
	Biomimetic Chemistry	()	<ul style="list-style-type: none"> ① Enzyme isomerism leading chiral homogeneity ② Characterization of polyelectrolyte complex ③ Polymer chemistry for exploration and simulation of biological functions
	Functional Foods and Food Chemistry	YOSHIDA Shigeki	<ul style="list-style-type: none"> ① Structure and function of bioactive compounds in food ② Production of bioactive compounds by using bioconversion process ③ Development of industrial enzymes for food production

	Field of Research	Faculty	Detailed Description of Research Field
Applied Biochemistry Field	Molecular and Cellular Chronobiology	*() (AIST)	① Mammalian circadian clock genes and application for diseases (sleep abnormality.) ② Molecular Circadian clock of Drosophila (clock and Neurodegeneration) ③ Clock genes, lipid metabolism and torpor ④Molecular Biological model of Parkinson's and Gaucher disease
	Evolutionary Biology of Symbiosis	*FUKATSU Takema (AIST)	① Biological function, evolution and origin of endosymbiotic associations between insects and microorganisms ② Molecular, physiological and regulating mechanisms underlying sophisticated inter-organismal interactions in symbiosis, parasitism, manipulation and sociality
	Molecular Neurobiology	*DOI Motomichi (AIST)	① Molecular analysis of nervous-system formation and maintenance ② Development of screening systems for neuronal dysfunctions and diseases ③ Development of in-vivo imaging methods for neuronal functions
	Applied Bioengineering of Microbial Ecosystems	*KIMURA Nobutada (AIST)	① Culturing the uncultured beneficial and fastidious microorganisms from the environment ② Exploration and elucidation of unidentified functions in novel biological and genetic resources and their application for bio-industries ③ Environmental metagenomics-driven discovery of novel microbial genetic resources ④ Ecophysiology of environmental microorganisms contributing to energy production and environmental remediation
	Molecular and Developmental Biology	BABA Tadashi baba.tadashi.gf#@#u.tsukuba.ac.jp KASHIWABARA Shin-ichi kashiwabara.shin.fw#@#u.tsukuba.ac.jp	① Transcriptional and translational regulation of genes during gametogenesis ② Functional roles of proteins involved in fertilization, egg activation, and early embryonic development ③ Development of reproductive and developmental technologies for future life
	Biology for Gene Regulation	KIMURA Keiji	① Analysis for dynamics of mitotic chromosomes. ② Analysis for function of condensin complex. ③ Analysis for novel function of the nucleolus.
	Ecological Molecular Microbiology	TAKAYA Naoki	① Environmental response and morphogenesis of filamentous fungi ② Enzymology and molecular biology of microbial enzymes ③ Bacterial metabolisms and communication

Science for Food Functions	MIYAZAKI Hitoshi miyazaki.hitoshi.gb#@#u.tsu kuba.ac.jp	① Exploration study on food-derived functional compounds for the prevention and improvement of lifestyle-related disease. ② Exploration study on food-derived functional compounds for the prevention and improvement of fertility of livestock and human.
Environmental Soil Chemistry	TAMURA Kenji ASANO Maki	① Environmental chemistry of forest soils ② Soil ecological studies on soil organic matter ③ Soil conservation under grassland in Eurasian steppe
Environmental Plant Biochemistry	YAMAJI Keiko	① Effect of endophytic microbes on heavy-metal stress tolerance in plants ② Effect of endophytic microbes on environmental stress tolerance in plants ③ Effect of endophytic microbes on radio Cs accumulation in plants

* Adjunct professor of the Cooperative Graduate School (not assigned academic advisor's position for research students [kenkyusei]).

※ The faculty member marked with ※ will be retired by March 31, 2019.

Professional Training Program in International Agricultural Research

Basic Subject Matter (1 unit from the following two subjects)(A1)

Course Number	Course Name	Credits	Year Usually taken	Semester	Scheduling	Staff
01AB002	Writing Scientific Papers in English for Students of Agro-Bioresources Science and Technology	1.0	1, 2	FallAB	Mon5	DeMar Taylor, Natsuko Kinoshita
01AB003	Basic Study on Agro-bioresources Science and Technology for Foreign Students	1.0	1	FallAB	Wed1,2	Atsushi Tajima, Marcos Antonio das Neves

Program Common Subject Matter (Compulsory) (C1)

Course Number	Course Name	Credits	Year Usually taken	Course Offering Term	Scheduling	Staff
01AB784	Special Research Work I	2.0	1	Annual	by appointment	Yuichi Yamaoka,Sosaku Ichikawa
01AB756	Special Research Work II	3.0	2	Annual	by appointment	Yuichi Yamaoka,Sosaku Ichikawa
01AB757	Special Research Work III	6.0	2	Annual	by appointment	Yuichi Yamaoka,Sosaku Ichikawa

Program Elective Subject Matter (D1)

Course Number	Course Name	Credits	Year Usually taken	Course Offering Term	Scheduling	Staff
01AB765	Conservation of Soil and Water Resources	2.0	1, 2	SprAB	Intensive	Yasuhisa Adachi
01AB767	Rural Development Policy and Planning	2.0	1	FallAB	Intensive	Ryuichi Shigeno,Satoshi Tachibana,Yoshiro Higano,Taiichi

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						Ito,Morio Kato,Ryozo Noguchi,Hisato Shuto,Shusuke Matsushita
01AB768	Basic Plant Biotechnology	2.0	1, 2	SprAB	Fri2,3	Hiroshi Ezura,Hideki Aoyagi,Hiroshi Matsumoto,Sumiko Sugaya,Shigeki Yoshida,Tohru Ariizumi,Satoko Nonaka
01AB769	Environmental Management Technology	2.0	1, 2	SprAB	Tue2,3	Yooichi Kainoh,Zhen Ya Zhang,Nakao Nomura,Nobuhiko Nomura,Keiko Yamaji,Yingnan Yang,Takuma Genkawa,Toshiaki Nakajima- Kambe,Shigeru Matsuyama,Kiyokazu Kawada
01AB770	Appropriate Use of Genetic Resources	2.0	1, 2	FallAB	Tue3,4	Yuichi Yamaoka,Ryo Ohsawa,Hitoshi Miyazaki,Atsushi Asano,Atsushi Tajima,Izumi Okane,Junichi P. Abe,Yasuhiro Ishiga,Yasunari Fujita,Makoto Kawase
01AB771	Conservation and Sustainable Use of Biological Diversity	1.0	1, 2	SprAB	Tue4	Kazuo Watanabe
01AB772	Ethics, Legal and Social Implication on Science and Technology	1.0	1, 2	SprAB	Tue5	Kazuo Watanabe

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01AB773	Introduction to Sustainable Agriculture in Rural Areas	2.0	1, 2	FallAB	Wed3,4	Ahamed Tofael
01AB774	Concept of Sustainability Index	2.0	1, 2	FallAB	Thu3,4	Ahamed Tofael
01AB785	Agricultural Research Methodology	2.0	1	SprAB	Thu4,5	Ahamed Tofael
01AB368	Basic and applied science for global food security	1.0	1	SprC	Wed1,2	Miyako Kusano
01AB758	Capacity Development	1.0	1, 2	FallC	Intensive	Hana Kobayashi
01AB760	Gender in Rural Development	1.0	1, 2	FallC	Intensive	Hana Kobayashi
01AB007	Communication Technique	1.0	1, 2	AprAB	Wed2	Diana Michaela Buzas
01AB388	Metabolomics	1.0	1, 2	Spr Vac		Dominique Rolin
01AB384	Basic and Applied Engineering for Bioresource	1.0	1	SprC	by appointment	Yutaka Kitamura, Ahamed Tofael, Ryoze Noguchi, Yasuhisa Adachi, Motoyoshi Kobayashi, Toshiharu Enomae, Akiko Nakagawa-Izumi, Norifumi Hotta