

## WINGS advanced skill training programs 2023

July 4, 2023

WINGS	Page
01 Next Generation Development Program for International Excellence	P2
02 WINGS for Creating Educational Research (WINGS-CER)	P3
03 WINGS: Advanced Business Law Program	P4
04 WINGS of Advanced Economics	P5
05 Global Studies Initiative: WINGS (GSI WINGS)	P6
06 WINGS of Advanced Basic Science Course (WINGS-ABC)	P7
08 Global Science Graduate Course (GSGC)	P8
09 International Graduate Program for Excellence in Earth-Space Science (IGPEES)	P9
10 Forefront Physics and Mathematics Program to Drive Transformation (FoPM)	P10
11 WINGS: Co-designing Future Society (WINGS CFS)	P11
12 WINGS Program for Materials Research, Information, and Technology (MERIT-WINGS)	P12
13 WINGS Program in Gerontology Global Leadership Initiative for Age-Friendly Society (WINGS-GLAFS)	P13
14 Sustainable Agriculture Education Program	P14~P15
15 WINGS for Life Science and Technology (WINGS-LST)	P16
16 WINGS for Frontiers of Mathematical Sciences and Physics (WINGS-FMSP)	P17
17 WINGS Program in Proactive Environmental Studies (WINGS-PES)	P18
18 International Graduate Program of Innovations for Intelligent World	P19
19 Quantum Science and Technology fellowship Program (WINGS-QSTEP)	P20
20 Global Leadership Program for Social Design and Management (WINGS-GSDM)	P21

- The advanced skills training program offered by WINGS requires annual participation.
- The content that is mandatory to participate must be completed by the end of SPRING GX.
- Follow the instructions of the respective WINGS when participating in the content.

**01 WINGS name: Next Generation Development Program for International Excellence**

Offered contents					
Content name	days / hours	online or face-to-face	Target grade	requirement*	Notes
Task-oriented seminar in research activity	Occasional(All year · Intensive lecture)	online · face-to-face	D1~D3	○	Set a research activity in consultation with the supervisor

\*1 ○: Required to take, △: Required to take one of them

**02 WINGS name: WINGS for Creating Educational Research (WINGS-CER)**

Offered contents					
Content name	days / hours	online or face-to-face	Target grade	requirement*	Notes
Stanford/Utokyo Partnership Program on International/Cross-Cultural Education and Global Citizenship	~6 lectures in total (Partial enrollment possible)	online	D1~D3	○	
International Scholarly Dialogue for Developng Global Leaders	2-3 days	online or face-to-face	D1~D3		Depending on the situation, there is a possibility of face-to-face implementation in a foreign country.

\*1 ○: Required to take, △: Required to take one of them

**03 WINGS name: WINGS: Advanced Business Law Program**

**Offered contents**

Content name	days / hours	online or face-to-face	Target grade	requirement*	Notes
Advanced Bussiness Law Program Lecture	105 min./ lecture ~10 lectures/ year	online	D1~D3	○	

\*1 ○: Required to take, △: Required to take one of them

**04 WINGS name: WINGS of Advanced Economics**

Offered contents					
Content name	days / hours	online or face-to-face	Target grade	requirement*	Notes
Workshops for WINGS of Advanced Economics	once a week, All year	online or face-to-face	D1~D3	○	
Individual meetings with top researchers in Economics	~twice a year	online or face-to-face	D1~D3		

\*1 ○: Required to take, △: Required to take one of them

**05 WINGS name: Global Studies Initiative: WINGS (GSI WINGS)**

Offered contents					
Content name	days / hours	online or face-to-face	Target grade	requirement*	Notes
GSI Seminar	90 min., occasionally held	online or face-to-face	D1~D3		
GSI WINGS Meeting	50 min., twice a month	online	D1~D3	○	

\*1 ○: Required to take, △: Required to take one of them

**06 WINGS name: WINGS of Advanced Basic Science Course (WINGS-ABC)**

Offered contents					
Content name	days / hours	online or face-to-face	Target grade	requirement*	Notes
Advanced Basic Sciences Seminar	~half a day	face-to-face	D1~D3	○	The content is to introduce your research to the undergraduates during the lunch break, which includes a practice presentation to the course students in advance.

\*1 ○: Required to take, △: Required to take one of them

**08 WINGS name: Global Science Graduate Course (GSGC)**

**Offered contents**

Content name	days / hours	online or face-to-face	Target grade	requirement*	Notes
GSGC Exchange Semina	3時間	online	D1~D3	○	

\*1 ○: Required to take, △: Required to take one of them



**09 WINGS name: International Graduate Program for Excellence in Earth-Space Science (IGPEES)**

Offered contents					
Content name	days / hours	online or face-to-face	Target grade	requirement*	Notes
Special Lectures on Earth-Space Frontier Science	1 class × 13 times	online	D1~D3	△	
Exercises in Earth-Space Frontier Science	3 days	online	D1~D3	△	
Onsite Training in Earth-Space Frontier Science	more than 2 weeks	face-to-face or online	D1~D3	△	

\*1 ○: Required to take, △: Required to take one of them

**10 WINGS name: Forefront Physics and Mathematics Program to Drive Transformation (FoPM)**

Offered contents					
Content name	days / hours	online or face-to-face	Target grade	requirement*	Notes
Diversity and Ethic Training	2 hours × 3 times	online	D1~D3	○	
4PM Seminar	2 hours/1 lecture	online	D1~D3	△	
International Career Seminar	1 day	online/face-to-face	D1~D3	△	
International Research Experience	2 weeks~3 months	face-to-face	D1~D3		

★The students have to select two from the above contents.

\*1 ○: Required to take、△: Required to take one of them

**11 WINGS name: WINGS: Co-designing Future Society (WINGS CFS)**

**Offered contents**

Content name	days / hours	online or face-to-face	Target grade	Requirement*	Notes
Engineering Competency I-Project Based Learning	Once a week, half a year	face-to-face (available online) (planned in 2023 FY)	D1~D3		
Engineering Competency II-Research Internship	1~2 months (internship at a company), All year	online or local face-to-face (depending on companies: FY2022 results)	D1~D3		
Engineering Competency III-Summer Camp	3~4 days (Intensive lecture course)	face-to-face (planned in 2023 FY)	D1~D3		
Fundamentals of Future Society Initiative I	4 lectures × 3 days (Intensive lecture course), half a year	online (FY2022 results)	D1~D3		class to be canceled in 2023 S-semester
Fundamentals of Future Society Initiative IIE	4 lectures × 3 days (Intensive lecture course), half a year	face-to-face (planned in 2023 FY)	D1~D3		
Engineering Literacy II -Business Strategy, Intellectual Property-	Once a week, half a year	face-to-face (planned in 2023 FY)	D1~D3		
Poster Presentation	half a day	face-to-face (some sessions will be online)	D1~D3	○	

\*1 ○: Required to take, △: Required to take one of them

**12 WINGS name: WINGS Program for Materials Research, Information, and Technology (MERIT-WINGS)**

Offered contents					
Content name	days / hours	online or face-to-face	Target grade	requirement*	Notes
Conspectus of advanced materials science	S semester, every week	face-to-face or online	D1~D3	○	Must be taken while enrolled in the course.
Material science executive seminar	All year, 4 times a year	On-site, face-to-face or online	D1~D3	○	Opportunities for visiting innovation sites such as domestic and foreign companies, and research institutes, as well as on-site discussion at public offices. Must be taken at least three times while enrolled in the

\*1 ○: Required to take, △: Required to take one of them

**13 WINGS name: WINGS Program in Gerontology Global Leadership Initiative for Age-Friendly Society (WINGS-GLAFS)**

Offered contents					
Content name	days / hours	online or face-to-face	Target grade	requirement*	Notes
General Theory of Gerontology 1	one period per week, one term	online or face-to-face	D1/MD1	<input type="radio"/>	
General Theory of Gerontology 2	one period per week, one term	online or face-to-face	D2/MD2	<input type="radio"/>	
Practical Exercise for Gerontology	Half a day (Once) *MD3 and MD4 are required to participate each year.	online or face-to-face	D3/MD3/M	<input type="radio"/>	Participate in "Gerontology Academy" activities.

\*1 : Required to take, : Required to take one of them

**14 WINGS name: Sustainable Agriculture Education Program**

Offered contents					
Content name	days / hours *FY2022	online or face-to-face *FY2022	Target grade	requirement*	Notes
WINGS Sustainable Agriculture Education Program research exchange meeting		online or face-to-face	D1~D4	○	
Mathematical sciences in agriculture	S1/SP terms	face-to-face and online	D1~D4		Recommened course
Practical Training in the Sustainable Agriculture Education Program I		face-to-face	D1~D4		Recommened course
Practical Training in the Sustainable Agriculture Education Program II		face-to-face	D1~D4		Recommened course
Practical Training in the Sustainable Agriculture Education Program III		face-to-face	D1~D4		Recommened course
Sequence Statistics and Mathematical Biology	S1 term	online	D1~D4		Recommened course
Introduction to Genome Informatics	S1 term	online	D1~D4		Recommened course
Introduction to Biostatistics	S1 term	online	D1~D4		Recommened course
Knowledge Information Processing	SP/A1 terms	online	D1~D4		Recommened course
Sequence Statistics and Mathematical Biology	every other year	every other year	D1~D4		Recommened course
Molecular Modeling and Simulation	S1/SP terms	online	D1~D4		Recommened course
Omics Analysis	A1 term	online	D1~D4		Recommened course
Functional Genomics	S1/SP term	online	D1~D4		Recommened course
Introduction to Systems Biology	SP term	online	D1~D4		Recommened course
Introduction to Structural Bioinformatics	S1 term	online	D1~D4		Recommened course
Field Informatics	S1/SP term	online	D1~D4		Recommened course
Special Lectures on Agricultural Bioinformatics I	A1 term	online	D1~D4		Recommened course
Special Lectures on Agricultural Bioinformatics II	SP term	online	D1~D4		Recommened course
Special Lectures on Agricultural Bioinformatics III	S1 term	online	D1~D4		Recommened course
Special Lectures on Agricultural Bioinformatics IV	SP term	face-to-face and online	D1~D4		Recommened course
Special Lectures on Agricultural Bioinformatics I	every other year	every other year	D1~D4		Recommened course
Research Exercise on Agricultural Bioinformatics	W term	online	D1~D4		Recommened course
Food Science Seminar Series I	S1/SP/A1 terms	face-to-face and online	D1~D4		Recommened course
Food Science Seminar Series II	S1/SP terms	online	D1~D4		Recommened course
Food Science Seminar Series III	SP term	face-to-face (Internship at the Ministry of Health, Labour and Welfare or the Ministry of Agriculture, Forestry and Fisheries)	D1~D4		Recommened course
Topics in Biomass Utilization Research I	S1/SP terms	face-to-face	D1~D4		Recommened course
Topics in Biomass Utilization Research II	S1/SP terms	face-to-face	D1~D4		Recommened course
Biomass Utilization Research Seminar I	SP term	face-to-face	D1~D4		Recommened course
Biomass Utilization Research Seminar II	SP term	Not available	D1~D4		Recommened course
Seminar for Global Agriculture and Culture	SP term	face-to-face and online	D1~D4		Recommened course

Practices in Global Agriculture and Culture	Domestic training (May-July) Overseas training: 10 days (September)	face-to-face	D1~D4		Recommened course
Biodiversity and Agriculture	every other year	every other year	D1~D4		Recommened course
Training in Nature Restoration Operation Monitoring	SP/A1 terms	face-to-face and online	D1~D4		Recommened course
Agro-Informatics Seminar	Occasional	face-to-face and online (Attendance at symposiums, tours and seminars)	D1~D4		Recommened course
Writing a Research Proposal	S1/SP terms	online	D1~D4		Recommened course
Writing a Research Article	A1/A2 terms	online	D1~D4		Recommened course
Attempts toward innovation and social implementation	SP term	face-to-face and online	D1~D4		Recommened course
Science Communication	W term	Not available	D1~D4		Recommened course
Seminar in Science Communication	SP term	face-to-face and online	D1~D4		Recommened course
Research Ethics and Clinical Ethics I	S1/S2 terms	online	D1~D4		Recommened course
Basic Lecture for Data Science for Drug Development	A1/A2 terms	online	D1~D4		Recommened course
Data Mining for Biology	A2 term	Not available	D1~D4		Recommened course
Software and Algorithm Design for Biology	S1 term	online	D1~D4		Recommened course
Fundamental Couse I	S1 term	face-to-face and online	D1~D4		Recommened course
Debate on Ethics in Science and Technology	S1/S2 term	face-to-face and online	D1~D4		Recommened course
Statistical Analysis for Biosciences	S1/S2 terms	face-to-face and online	D1~D4		Recommened course

\*1 ○: Required to take、△: Required to take one of them

**15 WINGS name: WINGS for Life Science and Technology (WINGS-LST)**

**Offered contents**

Content name	days / hours	online or face-to-face	Target grade	Requirement*	Notes
Multidisciplinary Lecture Series in Life Science & Technology	Once a week half term 105 min. / 1 lecture	online or face-to-face	D1~D4		English, held on S term. 2 credits. Credit can be given.
World-leading Innovative Lectures in Life Science & Technology	4 times a year, take 4 lectures 2 hours / lecture	online or face-to-face	D1~D4		English, point system. 2 credits. Credit can be given.
WINGS-LST Laboratory Training  ① Large Experimental Animal Exercise ② Collaborative projects with industrial companies ③ Global Faculty Development Course ④ Internship at industrial companies ⑤ Short-term stays overseas ⑥ Summer Internship ⑦ Designed by student	① Attended 2 lectures out of 4 lectures a year, about half a day for each lecture ② Several times a year, about half a day ③ Two days, about two hours for each lectures ④ Half a day to several days ⑤ About 2 weeks or more ⑥ About 2 months or more ⑦ Occasionally	① face-to-face ② online or face-to-face ③ online or face-to-face ④ online or face-to-face ⑤ face-to-face ⑥ face-to-face ⑦ online or face-to-face	D1~D4		Report submission required. Point system. 2 credits. Credits can be given for one or two courses, depending on the project. For projects that incur expenses, students can participate if the expenses can be covered by the expenses from SPRING or others.
WINGS-LST Seminars  ① WINGS Journal Club ② WINGSセミナー ( WINGS Seminars )	① Once a month, about 5 times in total, about 1 hour ② Occasionally held, 30 minutes to half a day	online or face-to-face	D1~D4		1 credit. Credit can be given. A point system for each project (a credit is given with 7 points).
WINGS-LST General Meeting / WINGS-LST Colloquium	Twice a year, half day to one day each	online or face-to-face	D1~D4	○	This is a social event for all. No credits will be given; if there is a participation fee for a face-to-face event, you can participate if it can be covered by SPRING or other
Coaching in English	~1 hour	online or face-to-face	D1~D4		No credits will be given
WINGS-LST Collaboration Project	half a year	online or face-to-face	D1~D4		No credits will be given. When the WINGS program student is the applicant, the SPRING student can participate as a co-applicant. However, they can only participate as a co-applicant if the cost of the joint research can be covered by SPRING or others.

\*1 ○: Required to take, △: Required to take one of them



**16 WINGS name: WINGS for Frontiers of Mathematical Sciences and Physics (WINGS-FMSP)**

Offered contents					
Content name	days / hours	online or face-to-face	Target grade	requirement*	Notes
Frontiers of Mathematical Sciences and Society II	Autumn semester	online or face-to-face	D1~D3	○	
Frontiers of Mathematical Sciences and Society IV	Autumn semester (5 days in mid-December)	online or face-to-face	D1~D3		
Frontiers of Mathematical Sciences and Physics I~X	Summer semester · Autumn semester	online or face-to-face	D1~D3		

\*1 ○: Required to take, △: Required to take one of them

**17 WINGS name: WINGS Program in Proactive Environmental Studies (WINGS-PES)**

Offered contents					
Content name	days / hours	online or face-to-face	Target grade	requirement*	Notes
Overseas Exercise in Proactive Environmental Studies II	Overseas Study for 3-6 months		D1~D3	<input type="checkbox"/>	Follow the course guidelines for the subjects in the Environmental Knowledge Professional Practicum Group (Subject Group C) ( <a href="https://wings-pes.edu.k.u-tokyo.ac.in/home-english/subject-list">https://wings-pes.edu.k.u-tokyo.ac.in/home-english/subject-list</a> )
Research Internship for Proactive Environmental Studies I/II	Internship for 3-6 months	online or face-to-face	D1~D3	<input type="checkbox"/>	Follow the course guidelines for the subjects in the Environmental Knowledge Professional Practicum Group (Subject Group C) ( <a href="https://wings-pes.edu.k.u-tokyo.ac.in/home-english/subject-list">https://wings-pes.edu.k.u-tokyo.ac.in/home-english/subject-list</a> )
Transdisciplinary Skills and Theories I/II	Participation in seminars of other lab. 6 months - 1 year	online or face-to-face	D1~D3	<input type="checkbox"/>	Follow the course guidelines for the subjects in the Environmental Knowledge Professional Practicum Group (Subject Group C) ( <a href="https://wings-pes.edu.k.u-tokyo.ac.jp/home-english/subject-list">https://wings-pes.edu.k.u-tokyo.ac.jp/home-english/subject-list</a> ) .
Critical Thinking Basics -Select concepts, tools and techniques I	12 lectures in S semester	online or face-to-face	D1~D3	<input type="checkbox"/>	
Critical Thinking Basics -Select concepts, tools and techniques II	12 lectures in A semester	online or face-to-face	D1~D3	<input type="checkbox"/>	
Critical Thinking Skills -Select applications & reflection I	12 lectures in S semester	online or face-to-face	D1~D3	<input type="checkbox"/>	
Critical Thinking Skills -Select applications & reflection II	12 lectures in A semester	online or face-to-face	D1~D3	<input type="checkbox"/>	
Special Lecture on Frontier Science X	12 lectures in S semester	online or face-to-face	D1~D3	<input type="checkbox"/>	
Special Lecture on Frontier Science XI	12 lectures in A semester	online or face-to-face	D1~D3	<input type="checkbox"/>	
Salon of Excellence	Once in 1-2 months	online or face-to-face	D1~D3	<input type="radio"/>	No credit given.

\*1 ○: Required to take, △: Required to take one of them

**18 WINGS name: International Graduate Program of Innovations for Intelligent World**

Offered contents					
Content name	days / hours	online or face-to-face	Target grade	requirement*	Notes
Intoroduction to Management / Lecture for Global Creative Leaders II	1 lecture / week (6th period of Fri., A1/A2 terms)	online/face-to-face	D1~D3	△	
Facing Social Issues with ICT / Lecture for Global Creative Leaders IX	1 lecture / week (6th period of Tue., S1/S2 terms)	online/face-to-face	D1~D3	△	
Practice of Future Creation Innovation/ Lecture for Global Creative Leaders X	1 lecture / week (5th period of Thu., A1/A2 terms)	online/face-to-face	D1~D3	△	
Introduction to Machine Learning / Intelligent World Informatics Lecture V	1 lecture / week (3rd period of Thu., A1/A2 terms)	online/face-to-face	D1~D3	△	This lecture is given in English.
Information System Exercises/Intelligent World Informatics Special Lecture VI	1 lecture / week (6th period of Thu., A1 term)	online/face-to-face	D1~D3	△	
GCL Special Lecture in Information Science and Technology VIII	A1 Int	online/face-to-face	D1~D3	△	
Introducing basic machine learning algorithms and their applications / GCL Special Lecture in Information Science and Technology V	1 lecture / week (3rd period of Thu., S1/S2 terms)	online/face-to-face	D1~D3	△	This lecture is given in English.
Training Camp for Intelligent Society	around 2 days in total	online/face-to-face	Newcomers	○	
Orientation for new students	1 hour	online	Newcomers	○	
Elevator pitch workshop	1 day	online	Newcomers	○	
Monthly Meeting	about 2 hours / month	online	D1~D3	○	
Research Presentation (Poster Session)	Half day / year	online/face-to-face	D1~D3	○	
Meeting for Confirmation of Graduation	about 30 minits	online/face-to-face	D3	○	
Industry-academia collaboration internship ideathon	at any time	online/face-to-face	D1~D3		
Industry-academia collaboration internship	at any time	online/face-to-face	D1~D3		

\*1 ○: Required to take, △: Required to take one of them

**19 WINGS name: Quantum Science and Technology fellowship Program (WINGS-QSTEP)**

Offered contents					
Content name	days / hours	online or face-to-face	Target grade	requirement*	Notes
Q-STEP seminar	Occasional	online	D1~D3	○	
Quantum Science Technology Overlook Lecture III	13 lectures	online	D1~D3	○	

\*1 ○: Required to take, △: Required to take one of them

**20 WINGS name: Global Leadership Program for Social Design and Management (WINGS-GSDM)**

Offered contents (Students are recommended to take one course each year from the categories of <input type="checkbox"/> ①, <input type="checkbox"/> ②, and <input type="checkbox"/> ③. In no particular order.)					
Content name	days / hours	online or face-to-face	Target grade	requirement*	Notes
Lecture : Social Design and Global Leadership	2 credits ( S semester, Intensive lecture)	online or face-to-face	D1~D3	<input type="checkbox"/> ①	Students are recommended to take the course.
Lecture : Engineering Competency I - Project Based Learning-	2 credits (A semester · Thursday, 5th period)	online or face-to-face	D1~D3	<input type="checkbox"/> ②	Students are recommended to take either of the courses of <input type="checkbox"/> ②.
Lecture : Case Study (Project Based Learning on the Technological Innovation and the Social Solutions)	2 credits (A semester · Intensive lecture)	online or face-to-face	D1~D3	<input type="checkbox"/> ②	
Lecture : Case Study (Social Design and Management)	2 credits (Intensive lecture, S semester)	online or face-to-face	D1~D3	<input type="checkbox"/> ③	Students are recommended to take one of the courses of <input type="checkbox"/> ③.
Lecture : Engineering Competency II -Research Internship-	2 credits (All year · Intensive lecture)	online or face-to-face	D1~D3	<input type="checkbox"/> ③	
International Project (=Application support for the GX Overseas Study Program, etc.)	at any time	online or face-to-face	D1~D3	<input type="checkbox"/> ③	
Student Initiative Project (Reference video: <a href="https://youtu.be/Sa0qG7hkIBI">https://youtu.be/Sa0qG7hkIBI</a> )	at any time	online or face-to-face	D1~D3	<input type="checkbox"/> ③	