

World-leading Innovative Graduate Study Program (WINGS)
“Co-designing Future Society” (CFS)
The University of Tokyo
2019 Spring Application Guideline



1. The idea of the educational program

Our vision for the future is a sustainable society in which everyone is freed from the fear of poverty, and having dignified and healthy life equally enjoyable, with human rights respected and equal. Adopted in September 2015 UN 2030, the Agenda for Sustainable Development (2030 Agenda), with the aim of achieving a better future, has 17 sustainable development goals (SDGs) and 169 targets necessary to achieve these goals. The SDGs take into consideration not only developing countries but also developed countries, aiming a sustainable natural resources consumption and production that secures needs of the future generations while satisfying needs of the current generation, urgent measures against climate change, and pursuit of peace. It is an international aspiration that has been agreed among UN member states for ultimate goal of a sustainable society where economic development, social justice and environmental protection are harmonized through global partnerships based on the spirit of global solidarity.

We set goals based on clear vision as well as traditional (technology push) type innovation along with fundamental research of new technology, applied research, development, demonstration and commercialization, and develop technology as needed. As new innovation efforts are needed, the demand-pull model of innovation which fulfills the needs of society is also being implemented. Nowadays that there are numerous debates on various issues causing increasing uncertainty related to the way how to solve them thus we should have the ability to understand these issues accurately and try to solve these issues which are closely related to society. For that purpose employing different means such the Internet of Things (IoT), Big Data, Robotics and the development of various sciences and technologies, such as the rapid development and universalization of artificial intelligence are crucial, next to the reform of socio-economic systems, legal system regulation, and the search for products and services harmonized with people's lives. We need human resources that can promote discussions on the realization of a future society in which economic development, social justice, and environmental conservation are in harmony, by connecting experts in diverse fields and persons from industry, government, academia and government.

In this program, we describe the ideal future, sometimes we lead ourselves to achieve it, and sometimes we draw on the strengths of our outstanding leaders in each field, seeking a co-creation with stakeholders to realize innovation, train highly knowledgeable professional personnel who can realize implementation to the society. Going beyond "problem-solving human resources" who solve the problems that have emerged, logically draw a future society logically, foster "co-designing future society human resources" who will lead the realization of innovation by connecting related people. The purpose of this program is to foster a co-designing future society human resources able to drive a co-creation with stakeholder through completing this program, who will participate in the society as member of research institutes members, public organizations inside and outside the country, companies, civil organizations, and as entrepreneurs. We aim for providing these future leaders an experience and refine their qualities, and innovative mindset.

2. Our vision on training human resources

Through these activities, we will develop human resources capable of both developing their own expertise knowledge and abilities to a higher level beyond their field of discipline. Who are leaders that excels in both science and technology management and organizational management in co-creation of the sustainable future society.

The vision of human resources we train in this program has a specialized but open for flexibility beyond their

field, and is a leader in co-creation of a sustainable future society that excels in both science and technology management and organizational management. We want to train human resources who can draw a long-term vision and set goals, bring together the knowledge of diverse fields of science or humanities, and innovation. In particular, the program will be focused on four areas, namely SDG 6 “Clean water and sanitation”, SDG 7 “Affordable and clean energy”, SDG 11 “Sustainable cities and communities”, and SDG 9 "Industry, innovation and infrastructure " which are expected to be major fields in the future, and are the most important fields in Japan, with a large ripple effect among SDGs.

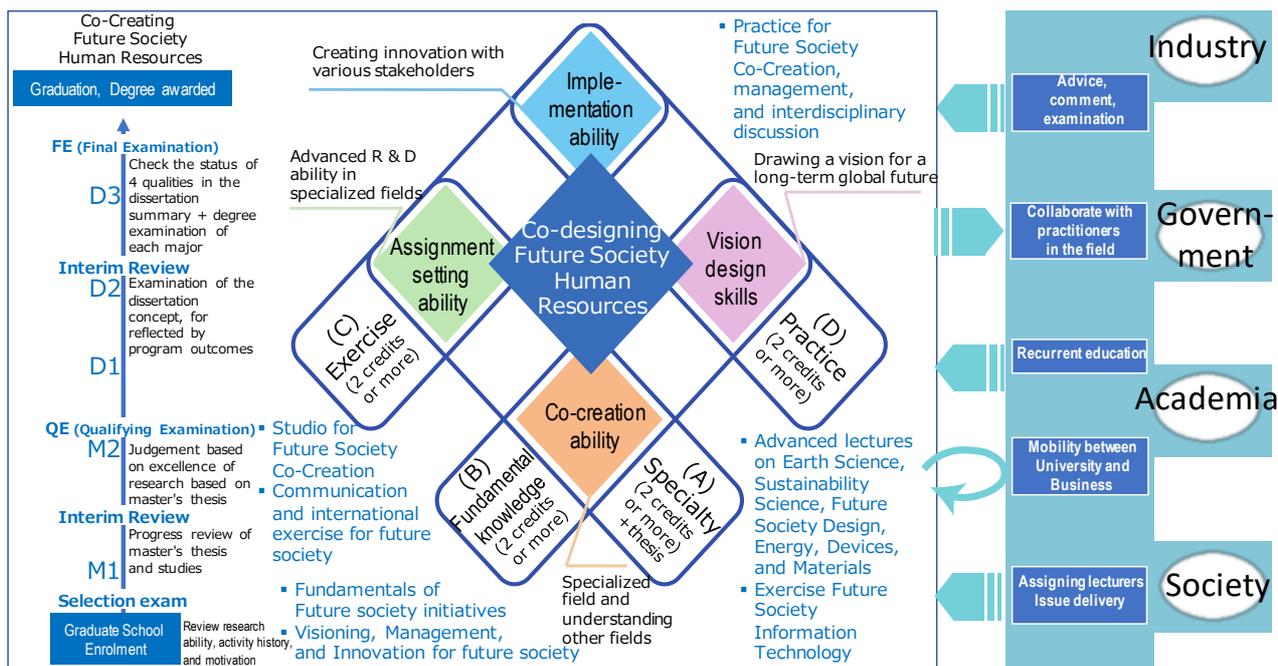
3. Eligible students

Any student of the Master's Program (1st and 2nd year) and the doctoral program (1st year, enrolled in April 2019) can apply for this program.

Students who apply for this program are required to:

- To enter the doctoral program of the University of Tokyo with the aim of obtaining a doctoral degree in the special field related to this program
- Fully understand the objectives and requirements of the program
- Apply for a JSPS Research Fellowship and pledge to continue to be enrolled in this program if accepted

* It is necessary for the affiliated graduate school and supervisor of the student to agree on the student enrolment to this program.



4. Curriculum overview

Co-designing Future Society human resources should obtain following qualifications, 1) vision design and communication skills, 2) ability to capture the issues of vision realization, 3) Consensus building for co-creation processes, and 4) implementation ability to execute the problem solution process and act toward social transformation.

As no human resources can be expert in all fields, considering the pace of knowledge diversification at modern day, we aim to train human resources how have ability to apply expertises in different fields for co-creation, regardless their background, in humanities or in sciences. Human resources for future social co-creation needs to learn a new values and qualities by pursuing goals through flexible collaborations. In order to acquire these qualities we selected wide range of courses, from fundamental lectures, exercises, practical trainings, specialized subjects.

For more details, please refer to the program homepage (<http://cfs.t.u-tokyo.ac.jp>)

(1) Fundamental: Characteristic lectures of this program

Fundamentals of Future Society Initiative

Visioning of Future Society

Management of Future Society

Innovation for Future Society

(2) Exercise: Group work activities mainly within the university, such as project-based-learning

Studio for Future Society Co-Creation

Communication for Future Society

International Exercise for Future Society Co-Creation

(3) Practical training: Activities outside the university, such as research internship

Practice for Future Society Co-Creation

Practice for Future Society Management

Practice for Interdisciplinary Discussion

International Practice for Future Society

(4) Specialization: Excellent understanding necessary for Creating Future Society human resources

Advanced Earth Science

Advanced Sustainability Science

Advanced Future Society Design

Exercise Future Society Information Technology

Advanced Energy for Future Society

Advanced Devices for Future Society

Advanced Material Science for Future Society

Table 1. Courses and number of credits

| Course name | Credits | Course method |
|---|---------|------------------------|
| Fundamentals of Future Society Initiative | 2 | Compulsory elective |
| Visioning of Future Society | 2 | |
| Management of Future Society | 2 | |
| Innovation for Future Society | 2 | |
| Studio for Future Society Co-Creation | 2 | |
| Communication for Future Society | 2 | |
| International Exercise for Future Society Co-Creation | 2 | |
| Practice for Future Society Co-Creation | 2 | |
| Practice for Future Society Management | 2 | |
| Practice for Interdisciplinary Discussion | 2 | |
| International Practice for Future Society | 2 | |
| Advanced Earth Science | 2 | |
| Advanced Sustainability Science | 2 | |
| Advanced Future Society Design | 2 | |
| Exercise Future Society Information Technology | 2 | |
| Advanced Energy for Future Society | 2 | |
| Advanced Devices for Future Society | 2 | |
| Advanced Material Science for Future Society | 2 | |

5. Course requirements

- (1) Earning 12 or more credits for the subjects listed in Table 1 through the master's program and doctoral program. In addition, the credits of the courses listed in Table 1 can be awarded by acquiring credits of substitute subjects.
- (2) Receiving and pass the Qualifying Examination (QE), Final Examination (FE) and Interim Review (IR) of this program.
- (3) Completing requirements of each major (including passing the master's thesis examination and doctoral dissertation examination).

6. Schedule of selection and procedure of application

The schedule (planned) is as follows.

April 4, 2019 17: 00-18: 00 (Thursday) - CFS Briefing Session (Guidance): Place Faculty of Engineering No. 2

Building 2nd floor 221, Lecture Room

April 12, 2019 (Friday) - Deadline for submission of application form (must arrive)

April 17, 2019 (Wednesday) - Interview

April 24, 2019 (Wednesday) – Announcement of admitted applicants list

Application form can be downloaded from the program's website. Submit the completed application form (1 original, 2 copies) by internal mail, to the address below :

Office of Academic Affairs Division, Graduate School of Information Science and Technology, The University of Tokyo, 7-8-1 Hongo, Bunkyo-ku, Tokyo 113-8656, Japan (in the Faculty of Engineering, Building 8)

Telephone +81-03-5481-7747

7. Qualifying Examination (QE), Final Examination (FE) and Interim Review (IR)

- IR is an interim review conducted prior to QE and FE, and it will be conducted in accordance with QE and FE.
- QE will be held in the second year of the master's program. From the viewpoint of research ability, ability for “Bird's-eye view” into problems, and appropriateness to this program, evaluating the midterm achievements, and oral examination on research background and motivation, research papers and project results.
- FE will be implemented upon completing the doctoral course. The requirements for completing this program will be confirmed in appropriate time advancement. A review through the lens of training human resources will be conducted.

8. Research assistant

- Students who apply for this program can apply to the University of Tokyo Superior Research Assistant (Superior RA), Graduate School of Engineering, Doctoral Student Special Research Assistant (SEUT-RA), etc.
- For outstanding master students and masters and doctoral students, a 180,000 yen a monthly remuneration will be offered under conditions of not receiving other scholarships. Please refer to our HP for further details. A half a year after entering the program, a research and study progress review will be conducted, following by application and examination, based on which RA employment decision will be made. Applicants should keep in mind that they register for subjects of this program.
- SEUT-RA is dedicated to students of the Graduate School of Engineering, and is based on the regulations of the Graduate School of Engineering.

9. Program implementing organizations

- School of Engineering
- Schools for Law and Politics
- School of Humanities and Sociology
- School of Frontier Sciences
- School of Agriculture and Life Sciences
- School of Arts and Sciences
- School of Frontier Sciences
- School of Interdisciplinary Information Studies
- School of Public Policy
- Research Center for Advanced Science and Technology
- Institute for Future Initiatives

10. Contact office / person in charge

WINGS-CFS Office office@gmsi.t.u-tokyo.ac.jp

Graduate School of Information Science and Technology, Academic Affairs Division Graduate School team
daigakuin.t@gs.mail.u-tokyo.ac.jp

Yokono Yasuyuki, Department of Mechanical Engineering, Graduate School of Engineering, Project Professor

Yasushi Akashi, Department of Architecture, Graduate School of Engineering, Professor

Yasunori Kikuchi, Institute for Future Initiatives / Associate Professor