Department of Advanced Energy and Department of Complexity Science and Engineering Graduate School of Frontier Sciences, The University of Tokyo FY2024 Master Course and Doctor Course

Guide to Nuclear Fusion Research Education Program

Application period and Examination schedule

Refer to Section [4] of this guide

Orientation for Entrance Examination

Refer to Section [5] of this guide

Contact

Department of Advanced Energy / Department of Complexity Science and Engineering E-mail: saito@ppl.k.u-tokyo.ac.jp/contact@c.k.u-tokyo.ac.jp

Program Website

https://www.k.u-tokyo.ac.jp/fusion-pro/

[1] About the Program

Fusion energy is the ultimate energy source for human beings, which has abundant natural resources and is environmentally friendly. In the field of fusion energy development, we have entered a new development stage for full-blown fusion experiments, as the International Thermonuclear Experimental Reactor (ITER) Project has been started with international collaboration. In particular, Japan has achieved world-class results in the field of nuclear fusion centered on the ITER project. In order for Japan to continue to play a leading role in fusion development, it is essential to continuously nurture excellent human resources who can play an active role internationally.

In order to respond to such demands, The University of Tokyo decided to open the "Nuclear Fusion Research Education Program" in 2008, based on the profound intellectual stock toward interdisciplinary fusion and the state-of-the-art equipment for practical education and research of the Graduate School of Frontier Sciences. This program is implemented by a curriculum system that crosses the Department of Advanced Energy and the Department of Complexity Science and Engineering of the Graduate School of Frontier Sciences. The main two components of the program are a "Curriculum for Integrated Education" that allows you to comprehensively and systematically study a wide range of basic science, and the advanced and exciting "Practical Research and Education Curriculum" based on cutting-edge research projects. In the interdisciplinary education curriculum, you can study a wide range of fields such as plasma science and technology, fusion engineering, and the environmental and social sciences from an interdisciplinary and bird's-eye view. In the practical research and education curriculum, we will provide pioneering and innovative research and education by actively utilizing advanced plasma experimental equipment and directly participating in cutting-edge research projects.

[2] List of Laboratories

■ Department of Advanced Energy



Nuclear Fusion Science

Professor Hiroshi Yamada

mail: yamada.hiroshi@k.u-

tokyo.ac.jp

tel: +81-(0)4-7136-4342



Plasma Physics and Fusion Engineering

Professor Yasushi Ono

mail: ono@k.u-tokyo.ac.jp tel: +81-(0)3-5841-6686



Plasma Applied Engineering

Professor Ryo Ono

mail: ryo-ono@k.u-tokyo.ac.jp tel: +81-(0)3-5841-6663



Plasma Physics and Fusion Engineering

Professor Michiaki Inomoto

mail: inomoto@k.u-tokyo.ac.jp tel: +81-(0)4-7136-4341



Plasma Material Interaction and Nano Material

Professor Shin Kajita

mail: kajita@edu.k.u-tokyo.ac.jp tel: +81-(0)4-7136-3993



Plasma Physics and Plasma Science

Associate Professor Haruhiko Saitoh

mail: saito@ppl.k.u-tokyo.ac.jp tel: +81-(0)4-7136-3991



Plasma Physics and Fusion Engineering

Associate Professor Hiroshi Tanabe

mail:

tanabe@edu.k.u-tokyo.ac.jp tel: +81-(0)3-5841-6690

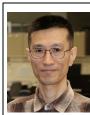
■ Department of Complexity Science and Engineering



Plasma Physics, Nuclear Fusion, and Tokamak

Professor Akira Ejiri

mail: ejiri@k.u-tokyo.ac.jp tel: +81-(0)4-7136-3926



Plasma Physics, Nuclear Fusion, and Tokamak

Professor Kouji Shinohara

mail:

shinohara@k.u-tokyo.ac.jp tel: +81-(0)4-7136-4044



Plasma Physics, Nuclear Fusion, and Tokamak

Lecturer Naoto Tsujii

mail: tsujii@k.u-tokyo.ac.jp tel: +81-(0)4-7136-3994

■ Department of Advanced Energy, Cooperative Laboratories

National Institute for Fusion Science (NIFS), National Institutes of Natural Sciences (NINS)



Plasma Physics and Nuclear Fusion Visiting Professor Hideo Sugama

mail: sugama.hideo@nifs.ac.jp tel: +81-(0)572-58-2370



Plasma Physics and Numerical Simulation Visiting Associate professor Shunsuke Usami mail: usami.shunsuke@nifs.ac.jp

tel: +81-(0)572-58-2356



Plasma Physics, Fusion Science, and Advanced Instrument Development Visiting Associate Professor Masaki Nishiura

mail: nishiura@nifs.ac.jp tel: +81-(0)572-58-2184

■ Department of Complexity Science and Engineering, Cooperative Laboratories

National Institute for Fusion Science (NIFS), National Institutes of Natural Sciences (NINS)



Plasma Physics and Simulation

Visiting Professor Yasushi Todo

mail: todo@nifs.ac.jp tel: +81-(0)572-58-2270

[3] Important Information on Entrance Examination

(Common to Master and Doctor Courses)

The laboratories of the Nuclear Fusion Research Education Program consist of the Department of Advanced Energy and the Department of Complexity Science and Engineering.

On application, select your potential supervisor from [2] List of Laboratories, and submit the Inquiry Sheet attached to the guidebook (Department of Complexity Science and Engineering) or according to the instruction of the guidebook (Department of Advanced Energy). For example, if you wish the surpervision of a Professor of the Department of Advanced Energy, you need to submit the Inquiry Sheet for the Department of Advanced Energy, together with other required documents.

For the entrance examination, take the examination of the Department of your potential supervisor. For details of the entrance examination, refer to the Guidebook/Explanatory Leaflet of each of the departments. For example, if your potential supervisor is a profossor of the Department of Complexity Science and Engineering, refer to the Guidebook of the Department of Complexity Science and Engineering.

Pass / fail judgment is made at each Department according to the examination results of all

applicants to the Department including the applicants to the Nuclear Fusion Research Education Program.

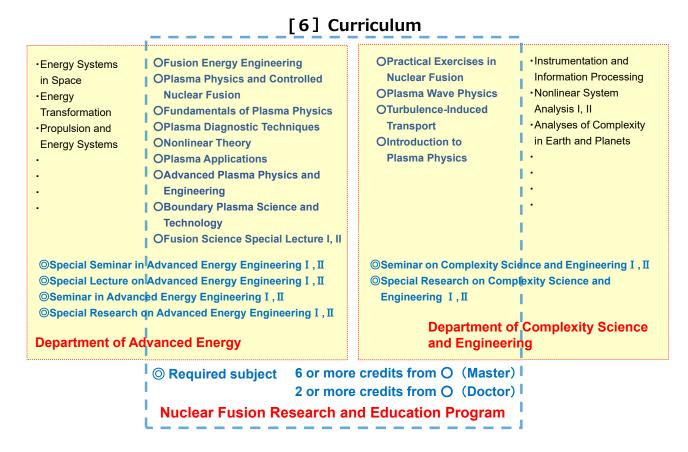
After you pass the examination and enroll, you will belong to the Department of Advanced Energy or Department of Complexity Science and Engineering, and take the curriculum of the Nuclear Fusion Research Education Program, which allows you to focus on the subjects required for fusion research. Please make sure to apply for the program at the application for admission, because we basically do not accept application to this program after the entrance examinations.

[4] Application Period and Examination Schedule

As explained in Section [3], applicants for the Nuclear Fusion Research Education Program take the entrance examination for the Department of Advanced Energy or the Department of Complexity Science and Engineering. Therefore, applicants should follow the instructions on application period and examination schedule of each of the Departments. For details of the schedule, refer to the Guidelines for Application of the Graduate School of Frontier Sciences and the Guidebook/Explanatory Leaflet of each of the Departments

[5] Orientation for Entrance Examination

As explained in Section [3], applicants for the Nucler Fusion Research and Education Program take the entrance examination for the Department of Advanced Energy or the Department of Complexity Science and Engineering. Refer to the entrance examination information available at the website of each of the Departments.



Students enrolled in the Nuclear Fusion Research Education Program belong to either the Department of Advanced Energy or the Department of Complexity Science and Engineering,

depending on the affiliation of the supervisor. The number of credits required to complete the course and the required courses are determined by each of the Department. Students of the program are expected to take courses including the subjects decited by the Program (marked with \bigcirc in the above figure). Please note that students of the Program can earn the credits of curses of other Department as credits of their own Department.

(1) Master Course

30 or more credits, including the required subjects of the Department and 6 or more credis of the Nuclear Fusion Research Education Program, are needed.

(2) Doctor Course

20 or more credits, including the required subjects of the Department and 2 or more credis of the Nuclear Fusion Research Education Program, are needed.