

**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)


	<p>Plasma Physics and Nuclear Fusion Visiting Professor Hideo Sugama mail: sugama.hideo@nifs.ac.jp tel: +81-(0)572-58-2370</p>
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	<p>Plasma Physics and Numerical Simulation Visiting Associate professor Shunsuke Usami mail: usami.shunsuke@nifs.ac.jp tel: +81-(0)572-58-2356</p>
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	<p>Plasma Physics, Fusion Science, and Advanced Instrument Development Visiting Associate Professor Masaki Nishiura mail: nishiura@nifs.ac.jp tel: +81-(0)572-58-2184</p>
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■ Department of Complexity Science and Engineering, Cooperative Laboratories

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

	<p>Plasma Physics and Simulation Visiting Professor Yasushi Todo mail: todo@nifs.ac.jp tel: +81-(0)572-58-2270</p>
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[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 supervision 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 professor 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

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 decided by the Program (marked with ○ in the above figure). Please note that students of the Program can earn the credits of courses 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 credits 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 credits of the Nuclear Fusion Research Education Program, are needed.