

# Admissions in October 2022

## Fukushima University Graduate School of Symbiotic Systems Science and Technology (Master's Program)

- ◇ Major in Symbiotic Systems Science and Technology
- ◇ Major in Environmental Radioactivity

# Application Guide

Please note that this Application Guide is for admission in October 2022. For admission in April 2023, please check the Application Guide for admission in April 2023.

Application for the Graduate School of Symbiotic Systems Science and Technology (Master's Program) will be submitted online from October 2022.

Information in this guide (exam date, etc.) might be changed depending on the situation of COVID-19 spread. For the latest information, please visit the link below (Available only in Japanese).

Admission Information: <http://nyushi.adb.fukushima-u.ac.jp/>



Admissions Office  
1 Kanayagawa, Fukushima City,  
Fukushima Pref., 960-1296  
Phone: 81-24-548-8064  
<http://www.fukushima-u.ac.jp/>

Fukushima University  
Smartphone-friendly  
Website



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The Master's Program of Fukushima University Graduate School of Symbiotic Systems Science and Technology consists of the Major in Symbiotic Systems Science and Technology and the Major in Environmental Radioactivity. The Major in Symbiotic Systems Science and Technology consists of four fields (Field of Mathematics and Information Systems, Field of Physics and Mechatronics, Field of Material and Energy Science, and Field of Life and Environmental Sciences), and the Major in Environmental Radioactivity consists of three fields (Field of Modeling, Field of Modeling, and Field of Measurement). Please refer to our website for more details of majors or fields.

< Graduate School of Symbiotic Systems Science and Technology >  
<https://www.sss.fukushima-u.ac.jp/en?lang=en>

# I. Application Guide for Fukushima University Graduate School of Symbiotic Systems Science and Technology (Master's Program)

## 1-1. Admission Policy (Student Acceptance Policy) for the Major in Symbiotic Systems Science and Technology (Master's Program)

### ○ Educational Objectives and the Qualities Sought in Prospective Students

Global warming due to greenhouse gases, depletion of fossil resources, and environmental degradation in connection with economic development have become global problems. It is crucial to develop new technologies that can enable us to save energy and resources, which would realize economic growth while maintaining symbiosis with nature. In Japan, society is aging rapidly, and advanced support systems are required in the care and medical fields. Also, considering the decline in the working population, innovation in industrial structure is required.

To resolve such problems, we need human resources who have a global view, multifaceted perspectives, the ability to think in a new framework of "symbiotic systems science" and correspond thereto, and not be restricted by the existing framework of scientific technology.

The Major in Symbiotic Systems Science and Technology will select suitable human resources who have the will to construct new systems sciences for symbiosis among human beings, industry, and environment; and have a strong desire to pursue problem resolution actively.

In this Major, there are four fields of specialization that develop professional knowledge, expertise and skills, the ability to use practical knowledge and solve problems, and the attitude to understand phenomena from multifaceted perspectives through the following research. We seek students who are interested in any of these fields, and who think that the field of their choice is suitable for them.

#### **[Field of Mathematics and Information Systems]**

Research in mathematics, information science, and management systems engineering, as well as mathematics and information systems fields based thereon

#### **[Field of Physics and Mechatronics]**

Research in physics, mechanical engineering, electric and electronics engineering, and control engineering, as well as physics and mechatronics fields based thereon

#### **[Field of Material and Energy Science]**

Research in chemistry, material engineering, chemical engineering, energy engineering, and material and energy science fields based thereon.

#### **[Field of Life and Environmental Sciences]**

Research in biology, psychology, earth science, meteorology, hydrology, and life and environment fields based thereon.

### ○ Knowledge, Skills, and Will sought in Applicants

To develop professionals with practical ability to contribute to the region in the new academic framework of symbiotic systems science, we seek students or working persons who have the following knowledge, skills, and will to conduct studies and write a thesis in the subject groups mentioned in the curriculum policy.

- Basic knowledge acquired at the undergraduate programs of science and technology universities.
- Flexible thinking, the ability to comprehension, application, and expression
- Enthusiasm to resolve the problems of modern society in cooperation with a variety of people with independent attitudes toward study and research.

### ○ Basic Policy for Admission Selection

Selection shall be based on a comprehensive evaluation of oral presentation, oral exam, and application documents, categorizing General Exam, Working Person Special Exam, International Students Special Exam, and Recommendation-based Exam (for students of advanced courses of technical colleges). In the oral presentation, applicants shall be asked to explain their graduation research during their undergraduate studies and their research after admission. Oral exam shall focus on basic and specialized matters related to the oral presentation and its content. Through the oral presentation and exam, the applicants shall be comprehensively evaluated on their knowledge, skills, and motivation, as well as on their ideal student as described above.

## **1-2.Admission Policy (Student Acceptance Policy) for the Major in Environmental Radioactivity (Master's Program)**

### **○ Educational Objectives and the Qualities Sought in Prospective Students**

Radionuclides present in the environment may change their forms and state due to atmospheric and water circulation and activities of humans and other organisms, and migrate widely in the environment. The factors that influence such change can vary significantly from the physicochemical properties of radionuclides to meteorological conditions, nature and properties of soils, physio-ecological processes of plants and animals, and so on. Studies on environmental radioactivity, therefore, require interdisciplinary knowledge drawn from a wide range of sciences, including ecology, biology, geoscience, mathematical modeling, chemistry, physics, mechanical engineering, and electrical engineering, as well as a holistic perspective and approach.

Human beings have experienced environmental releases of anthropogenic radionuclides due to atmospheric nuclear tests and accidents, but there are still many unresolved aspects of their effects. Another recent issue related to radiation is the need to control naturally occurring radioactive materials (NORMs) released during the extraction and processing of minor metals and other natural resources, which are indispensable materials for the development of advanced industrial products.

With these issues in the background, the Major in Environmental Radioactivity will select suitable human resources who have the will to 1) elucidate the environmental behavior of natural and anthropogenic radionuclides, 2) become able to perform the measurement, monitoring design, control, prediction, and evaluation in a comprehensive manner from a medium- to long-term perspective, and 3) endeavor to solve challenges such as environmental protection, prediction and evaluation, environmental remediation, decommissioning, interim storage, decontamination, etc. Selection will be based on an overall assessment of various skills, including flexible thinking and analytical and observational skills.

In this Major, there are three fields of specialization that develop professional knowledge, expertise and skills, the ability to use practical knowledge and solve problems, and the attitude to understand phenomena from multifaceted perspectives through the following research. We seek students who are interested in any of these fields, and who think that the field of their choice is suitable for them.

#### **[Field of Ecology]**

Research in ecology and biology, as well as radioecology fields based thereon

#### **[Field of Modeling]**

Research in geoscience and computer modeling, as well as radiation modeling fields based thereon

#### **[Field of Measurement]**

Research in chemistry, physics, mechanical engineering, and electrical engineering, as well as radiation measurement fields based thereon

### **○ Knowledge, Skills, and Will sought in Applicants**

To develop professionals with practical ability to contribute to the region in the new academic framework of environmental radioactivity science, we seek students or working persons who have the following knowledge, skills, and will to conduct studies and write a thesis in the subject groups mentioned in the curriculum policy.

- Basic knowledge acquired at the undergraduate programs of science and technology universities.
- Flexible thinking, the ability to comprehension, application, and expression
- Enthusiasm to resolve the problems of modern society in cooperation with a variety of people with independent attitudes toward study and research.

### **○ Basic Policy for Admission Selection**

Selection shall be based on a comprehensive evaluation of oral presentation, oral exam, and application documents, categorizing General Exam, Working Person Special Exam, International Students Special Exam, and Recommendation-based Exam (for students of advanced courses of technical colleges). In the oral presentation, applicants shall be asked to explain their graduation research during their undergraduate studies and their research after admission. The oral exam shall focus on basic and specialized matters related to the oral presentation and its content. Through the oral presentation and exam, the applicants shall be comprehensively evaluated on their knowledge, skills, and motivation, as well as on their ideal student as described above.

## 2. Number of Students to be Admitted

### ○ General Entrance Exam, Working Person Special Exam, International Students Special Exam

Major	Field	Number of Students to be Admitted
		Admissions in October 2022
Major in Symbiotic Systems Science and Technology	Field of Mathematics and Information Systems	A few places available
	Field of Physics and Mechatronics	
	Field of Material and Energy Science	
	Field of Life and Environmental Sciences	
Major in Environmental Radioactivity	Field of Ecology	A few places available
	Field of Modeling	
	Field of Measurement	

\*The number of students to be admitted is the total number of students admitted through General Exams, Working Person Special Exams, and International Students Special Exams.

\*For Recommendation – Based Exam (students for non degree graduate program of National Institute of Technology), there is no admission in October.

\*No limit is set to the number of students for each field.

## 3. Application Qualification

### (1) General Exam

A person falling under either of the items 1) through 11) below, and also took the TOEIC or TOEIC-IP exams during the period from two (2) years before the date of entrance exam to the time of application, or plans to take them before the entrance exam, qualifies for the General Exam.

- 1) A person who has graduated from University, or is expected to graduate from University by the end of the month prior to the month of desired enrollment.
- 2) A person who was conferred a Bachelor's degree under the School Education Act, Article 104, paragraph 7, or is expected to be conferred by the end of the month prior to the month of desired enrollment.
- 3) A person who has completed a course of sixteen (16) years of school education in foreign countries, or is expected to complete it by the end of the month prior to the month of desired enrollment.
- 4) A person who has completed a course of sixteen (16) years of school education in foreign countries by taking class subjects from correspondence courses offered by foreign schools in Japan, or is expected to complete it by the end of the month prior to the month of desired enrollment.
- 5) A person who has completed a university course at an educational institution located in Japan that is recognized by the educational system of a foreign country (only limited to courses whose students, upon graduation, are recognized as having completed sixteen (16) years of school education in the foreign country) and is separately designated by the Minister of Education, Culture, Sports, Science and Technology, or is expected to complete it by the end of the month prior to the month of desired enrollment.
- 6) A person who was conferred a degree equivalent to a Bachelor's degree by completing a course with required completion years of three (3) years or more at a foreign university or any other foreign school (only limited to those whose comprehensive status of education and research activities are evaluated by the foreign government or a person who was certified by a related agency, or those that are separately designated by the Minister of Education, Culture, Sports, Science and Technology as being similar thereto) (including completion of the course by taking class subjects in a correspondence course offered by foreign schools in Japan and completion of the course at educational institutions recognized in the school education system of the foreign country, which is designated under the School Education Act, Enforcement Regulations, Article 155, paragraph 1, item 4), or who is expected to be conferred such a degree by the end of the month prior to the month of desired enrollment.
- 7) A person who has completed a post-secondary course of a specialized training college (only limited to those requiring more than four (4) years for completion and satisfying the standards determined by the Minister of Education, Culture, Sports, Science and Technology), which are separately designated by the Minister of Education, Culture, Sports, Science and Technology, after the date designated by the Minister of Education,

Culture, Sports, Science and Technology, or is expected to complete it by the end of the month prior to the month of desired enrollment.

- 8) A person who was designated by the Minister of Education, Culture, Sports, Science and Technology under the Notification of Ministry of Education No. 5 of 1953.
- 9) A person who has completed fifteen (15) years at school in a foreign country or fifteen (15) years at school in a foreign country by taking the class subjects in a correspondence course offered by international schools in Japan, and who is recognized by the School of Symbiotic Systems Science and Technology as having acquired the required credits through excellent performance.
- 10) A person who has completed a university course at an educational institution located in Japan that is recognized by the educational system of a foreign country as offering an international university course (only limited to courses whose students, upon graduation, are recognized as having completed fifteen (15) years of school education in the foreign country) and is separately designated by the Minister of Education, Culture, Sports, Science and Technology, and who is recognized by the School of Symbiotic Systems Science and Technology as having acquired the required credits through excellent performance.
- 11) A person who is recognized by the School of Symbiotic Systems Science and Technology as having the academic ability the same as or superior to that of a person who has graduated from a university, as a result of an individual enrollment qualification assessment and reached the age of 22 by the end of the month prior to the month of desired enrollment.

(Note)

- a. A person qualifying under item 11) above is a person who is not eligible under items 1) through 10) above (for example, a graduate of junior college, technical college, specialized training college, or miscellaneous school), who is recognized by the Graduate School of Symbiotic Systems Science and Technology as having the academic ability the same as or superior to that of a person who has graduated from a university, as a result of an individual enrollment qualification assessment.
- b. A person who intends to apply under the application qualification items 9), 10), or 11) must take an individual enrollment qualification assessment and enter the necessary matters in the Application Form prescribed by the University and submit at least one month before the application for the entrance exam, with the required documents. For the necessary documents for application, inquire with the Admissions Office of the University or refer to the "Entrance Exam Information" on the website of the University.
- c. Application of a person who is recognized as having the academic ability the same as or superior to that of those who have graduated from universities by the enrollment qualification assessment shall be accepted, and the person may take the entrance exam.

## **(2) Working Person Special Exam**

A person who falls under any of the application qualifications for (1) "General Exam" items 1) through 11) and also falls under any of the requirements set forth below A) through C) qualifies for the Working Person Special Exam.

- (A) A person who is employed by a company or a public agency, etc. at the time of application (except for those who are enrolled at universities).
- (B) A person who is not employed by a company or a public agency, etc. at the time of application, but more than two years have passed since graduating a university.
- (C) A person who is not employed by a company or a public agency, etc. at the time of application, but more than two years have passed since the acquisition of a Bachelor's degree from the National Institution for Academic Degrees and University Evaluation at the time of expected enrollment.

## **(3) International Students Special Exam**

A person who does not have Japanese nationality and qualifies under any of the application qualifications for (1) "General Exam" items 3) through 11) qualifies for the International Students Special Exam.

(Note)

If the person qualifies under any of the application qualifications of "(1) General Exam" item 1) or item 2), the person may not apply to the "International Students Special Exam."

#### 4. Application Procedure

◎ **Before applying, please be sure to contact the instructor you wish to serve as your supervisor and discuss your suitability for the field of study.**

If you do not know how or whom to contact, please notify the Admissions Office of the University (email: nyushi@adb.fukushima-u.ac.jp).

**※The Internet application site is only available in Japanese. If you have difficulty using the site in Japanese, the university will provide assistance with the Internet application. Please contact us by email (ier@adb.fukushima-u.ac.jp)**

(1) Check the Application Method (Step 1)

For details on the application procedure, please refer to the "Entrance Exam Information" posted on the university's website, (<http://nyushi.adb.fukushima-u.ac.jp/>) and the following

**The application procedure is not completed only with the "Internet Application Registration (Step 2 below)".**

Step 1	Check Application Method (See page 5-6)	Before you start the application procedure, please read this Application Guide carefully and confirm its contents.
▼		
Step 2	Internet Application Registration (See page 6)	During the application registration period, please access the Internet application site and enter the required information.
▼		
Step 3	Payment of exam fee (See page 6-7)	Follow the instructions on the Internet application site to pay exam fee. (Do not pay if you are applying for an exam fee exemption.)
▼		
Step 4	Preparation of necessary documents, Printing and sending (See page 7-9)	Please send the required documents printed from the Internet application site or the University website and all other required documents to the University by the ordinary registered express mail so that they reach the University by the end of the application period.
▼		
Step 5	Printing Exam Admission Slip (See page 9)	Once your application has been accepted, you will be able to print out your Exam Admission Slip from the Internet application site after the application period is over. Each applicant must print the Exam Admission Slip in color. Be sure to bring it with you on the day of the exam.

(2) Preparation in Advance ( Step 1 )

<b>Please check and prepare well in advance of registering your online application.</b>	
Preparation of PCs, etc.	Online applications must be processed under the following environment. <Windows> <ul style="list-style-type: none"><li>• Microsoft Edge (Latest Version)</li><li>• Google Chrome (Latest Version)</li><li>• Firefox (Latest Version)</li></ul> <Mac OS> <ul style="list-style-type: none"><li>• Safari (Latest Version)</li></ul> <Android 5.0 or higher > <ul style="list-style-type: none"><li>• Android Chrome</li></ul> <iOS 10.0 or higher > <ul style="list-style-type: none"><li>• Safari</li></ul> ※Please note that the site can be used even if the browser is not the latest version, but it may not work properly. In such cases, please update to the latest version.
Email Address Preparation and Email Setup	An email address is required for application, so please have it ready in advance. Smartphone and cell phone email addresses are also accepted. If you have set up a domain name filter, please add the following domains to your settings so that you can receive emails from these domains. <b>(@adb.fukushima-u.ac.jp, @postanet.jp)</b> The following emails will be sent to the email address registered at the time of application. ① Test email while entering online application registration ② Automatic email upon completion of application registration information ③ Automatic email upon completion of payment of exam fee (No email when exam fee is exempted.) ④ Email when your facial photo is approved or disapproved ⑤ Email when Exam Admission Slip becomes available and printable ※Do not change your email address until you print your Exam Admission Slip.
Preparation of applicant's photo (data)	A color facial photo (jpg) is required for online application registration. (Your facial photo will appear on Exam Admission Slip.) As it will be used for identification purposes, upload a clear facial photo on the Internet application site, facing front, upper body, hatless, without a background, and taken within three months prior to the application date. Photo size should be 4 cm (H) x 3 cm (W) and the file size should not exceed 3 MB. Please note that the application may not be accepted if the photo is not suitable for identification, such as those listed below [Examples of photos that may not be used] Difficulty in identification because of unclear, dark background, face turned sideways, makeup or bangs over the eyes, etc., multiple people in the photo, altered image, <b>re-photographed photo (taking a photo of an already developed photo)</b> etc.
Preparation of necessary documents, etc.	Please prepare the documents listed on "Applications Documents" (See page 8.) in advance so that they will be ready in time for the application period.
Preparation of an envelope	Please prepare a commercially available kakugata 2 envelope (240mm x 332mm) or a similar size envelope for submitting the application documents.
Preparation for printing forms (Printer, printing paper, etc.)	Forms printed from the Internet application site must be printed in color on A4 size paper, so please prepare a color printer and printing paper. You may use the printing services of public facilities or convenience stores to print your documents as long as they meet the printing requirements, but please be careful with your personal information. Applicants may be contacted if the printing is unclear and cannot be verified.

(3) Online Application Registration Period (Step 2)

**Wednesday, July 13, 2022 - Thursday, July 21, 2022, 4:30 p.m. in JST**

(4) Payment fee (Step 3)

Exam fee is **30,000 yen**. Please refer to the payment method on the Internet application site, and pay by "credit card", "convenience store", or "Pay-easy (Internet banking or bank ATM)". (A separate payment fee is required.)

**[Payment period]**

**Wednesday, July 13, 2022 - Thursday, July 21, 2022, 4:30 p.m. in JST**

**Payment is due within four days from the date of completion of the online application registration.  
(If the application deadline comes shorter than 4 days, payment is due on the application deadline.)**

Exam fee shall not be returned for whatever reasons after the application documents are received except for the following cases:

- a. The applicant paid exam fee but did not complete the application (did not submit application documents or the application documents were not received)
- b. The applicant mistakenly made a double payment of exam fee.
- c. The applicant obtained supporting documentation that certifies your eligibility for exam fee exemption after the application period.

Procedure for refund application shall be notified individually.

For inquiries regarding the refund of exam fees: Financial Affairs Division, Accounting section

Phone: +81-24-548-8064

**\*Exam fee exemption**

In order to reduce the financial burden of those affected by the Great East Japan Earthquake, TEPCO's Fukushima Daiichi Nuclear Power Plant accident, and the severe disasters such as the heavy rain fall in and after FY2011, and to ensure opportunities for those affected to pursue higher education, the University will offer special measures to exempt exam fee for all entrance Exams in FY2022.

For the conditions of the exemption, please refer to "13. Exam Fee Exemption for Those Affected by the Great East Japan Earthquake (Including the Nuclear Power Plant Accident) and Other Serious Disasters" on page 12. Please do not pay exam fee at the time of application if you would apply for exam fee exemption.

**(5) Application period (Step 4)**

Friday, July 15, 2022 - Thursday, July 21, 2022, 5:00 p.m. in JST

**(6) Submission of Application documents (Step 4)**

Fukushima University Admissions Office

1 Kanayagawa, Fukushima City, Fukushima Prefecture, 960-1296 Phone: +81-24-548-8064

**(7) Application documents (Step 4)**

Applicants shall prepare the following application documents and must submit them directly or send by ordinary registered express mail. If delivered after the application period, the application cannot be accepted. Please send it ahead of time, fully considering the period required for mailing.

However, only ordinary registered express mail postmarked by the originating office on or before July 20, 2022 (Wed.) will be accepted even if it arrives after the deadline. **Ordinary registered express mail postmarked by the sending office on the last day of the application period will not be accepted.** (This is because it is certain that the documents will not arrive at the University within the application period.)

If you bring your application, the Admissions Office is open from 9:00 a.m. to 5:00 p.m. on weekdays.

Application Documents

Documents required for application	Targeted persons	Remarks
1) Application Form (◆)	All persons	University designated form Please fill out the required information
2) Academic Performance Certificate	All persons	Issued by the president or dean of the University of graduation (affiliation) (copies are unacceptable)
3) Documents certifying the application qualification	All persons	Any of the following documents that apply. <ul style="list-style-type: none"> <li>• Certificate of (Expected) Graduation</li> <li>• Certificate of Degree Conferred</li> </ul> Issued by National Institution for Academic Degrees and University Evaluation: a person who intends to apply for conferment of degree or under application should submit the certificate prepared by the president of junior college or technical college that conferment of a Bachelor's degree has been or will be applied for. <ul style="list-style-type: none"> <li>• Certificate of (expected) completion of a post-secondary course of a specialized training college: a person falling under application qualification 7) should submit the certificate of (expected) completion specifying that the qualification requirements of "years required for completion are more than four (4)" and "total class hours required for completion of the course are over 3,400 hours".</li> <li>• Copy of an advanced teaching certificate or a Type I teaching certificate: a person who falls under the Notification of the Ministry of Education No. 5, Article 10, of 1953, out of those falling under application qualification 8) should submit a copy of the above certificate.</li> </ul>
4) Research Plan (◆)	All persons	University designated form Enter the summary of research plan
5) Performance Certificate of English Proficiency Test	General Exam Applicants	Scores from any of the following English proficiency tests shall be accepted. <ul style="list-style-type: none"> <li>• TOEIC (Open test)</li> <li>• TOEIC-IP (Including College TOEIC)</li> </ul> <b>The scores shall be those acquired by the test taken during the period from two (2) years before the date of entrance exam to the date of application.</b> TOEIC Official Score Certificate or Score Report (Individual Performance Sheet) shall be submitted for performance certificate. If a person took exam more than once, only one of the scores, which an applicant determines to be more favorable, needs to be submitted.
6) Research Results Report (◆)	Working Person Special Exam Applicants	University designated form Enter the research results and employment history, etc.
7) Documents proving current employment	Working Person Special Exam Applicants	A person falling under application qualification (2) (A) shall submit the documents certifying that the person is employed (a copy of employee ID, health insurance certificate, or wage statement, etc.)
8) Application form for Exam Fee Exemption (◆) and Documents to be Attached	*Applicants only	University designated form If you wish to apply for exam fee exemption, please do not pay exam fee at the time of application.
9) Envelope for submitting application documents	All persons	Please prepare a commercially available kakugata 2 (240mm x 332mm) envelope or similar size envelope, enclose the required documents applicable to you from 1) – 8) above, and send by ordinary registered express mail.
10) Address sheet (◇) for submission of application documents	All persons	Please print an address sheet in color from the Internet application site and glue it to the front side of the "9) Envelope for submitting application documents". Enclose the necessary application documents and mark the applicant' checklist on the address sheet to make sure that nothing is missing.

(8) Notes on Application Documents (Step 4)

- ① Documents marked with (◇) in the table are to be printed in A4 size in color from the Internet application site after registering the online application. Please note that once you have completed the online application registration, you will not be able to correct any of the information you have entered.
- ② Documents marked with (✦) in the table are to be printed in A4 size in black and white (double-sided printing in the case of multiple pages) from the University's website.(Exam Information - Application Guide on the University's website, [https://www.ier.fukushima-u.ac.jp/web/d\\_education\\_exam\\_e.html](https://www.ier.fukushima-u.ac.jp/web/d_education_exam_e.html) )  
Please use a black or blue ballpoint or fountain pen and write in block style. Documents not designated to be handwritten may be prepared on a computer.
- ③ Certificates, documents, materials, etc. written in languages other than Japanese must be accompanied by a Japanese translation.
- ④ Application Forms that do not have all the necessary documents attached by the due date shall not be accepted.
- ⑤ Changes to the documents shall not be permitted for any reason after completion of the application procedure.
- ⑥ If any fact different from the stated matters in the application documents was discovered, admission might be revoked even if the admission was approved.
- ⑦ 5) Performance Certificate of English Proficiency Test will be returned on the day of exam after the Admissions Office photocopies it. However, if you want to have it returned by mail, please prepare a "return envelope" by yourself, put a stamp on it, and enclose it with your application documents.
- ⑧ For 5) Performance Certificate of English Proficiency Test, if you cannot submit it with other application documents, you may bring it on the day of exam. However, please note that if you fail to submit it on the day of exam, you will be disqualified from taking exam. If you cannot submit it on the day of exam, consult with the Admissions Office. If you have already submitted it at the time of application, you cannot resubmit on the day of exam.

(9) Printing Exam Admission Slip (Step 5)

Exam Admission Slip can be printed from the Internet application site after the application period is over. Please print it in color, cut it with scissors along the cut line, and **bring it with you on the day of exam**. Email will be sent to email address registered at the time of application, informing you that you can now print Exam Admission Slip. Even if you do not receive an email from your provider, please log in to the Internet application site at least 3 days prior to Exam date to print Exam Admission Slip.

## 5. Selection Method

### (1) General Exam

- In the General Exam, selection shall be made by comprehensively considering the Performance Certificate of English Proficiency Test, oral presentation, oral exam, and application documents.
- In the oral presentation, applicants shall describe their graduation research during undergraduate courses as well as the details of research after admission, within ten (10) minutes. For the oral presentation, bring three copies of presentation materials, comprising a maximum of four pages of A4 paper, hand them over to the interviewers, and give explanations mainly using the materials. If necessary, you can use devices for supplementary explanations (for example, you may use the PC for playing motion pictures and for executing demonstration software) by bringing them in. You cannot use a screen or a projector.
- In the oral exam, questions shall be asked for about 10 minutes on basic and specialized matters related to the oral presentation and its content.

### (2) Working Person Special Exam

- In the Working Person Special Exam, selection shall be made by comprehensively considering the oral presentation, oral exam, and application documents.
- In the oral presentation, applicants shall describe their previous research findings and accomplishments as well as the details of research after admission, within ten (10) minutes. For the oral presentation, bring three copies of presentation materials, comprising a maximum of four pages of A4 paper, hand them over to the interviewers, and give explanations mainly using the materials. If necessary, you can use devices for supplementary explanations (for example, you may use the PC for playing motion pictures and for executing demonstration software) by bringing them in. You cannot use a screen or a projector.
- In the oral exam, questions shall be asked for about 10 minutes on basic and specialized matters related to the oral presentation and its content.

(3) International Students Special Exam

- In the International Students Special Exam, selection shall be made by comprehensively considering the oral presentation, oral exam, and application documents.
- In the oral presentation, applicants shall describe their previous research findings and accomplishments as well as the details of research after admission, within ten (10) minutes. For the oral presentation, bring three copies of distribution materials, comprising a maximum of four pages of A4 paper, hand them over to the interviewers, and give explanations mainly using the materials. If necessary, you can use devices for supplementary explanations (for example, you may use the PC for playing motion pictures and for executing demonstration software) by bringing them in. The languages used for application documents, distribution materials, and oral presentation shall be English or Japanese. You cannot use a screen or a projector.
- In the oral exam for the Major in Symbiotic Systems Science and Technology, about 10 minutes exam will be conducted in Japanese, with respect to the oral presentation as well as basic and specialized matters related to the oral presentation and its content.
- In the oral exam for the Major in Environmental Radioactivity, about 10 minutes exam will be conducted in Japanese or English, with respect to the oral presentation as well as basic and specialized matters related to the oral presentation and its content. Only for residents of foreign countries, if it is difficult to take oral exam and make an oral presentation at Fukushima University Exam Venue, Exam might be conducted over Skype, etc.

**6. Exam Schedule and Venue**

(1) Exam Schedule

Category	Exam Date	Exam Method
General Exam	<b>Friday, August 19, 2022</b> Meeting times will be announced in the "Exam Information" page on the University's website at least one week prior to the exam date.	Oral presentation/ Oral exam
Working Person Special Exam		
International Students Special Exam		

\*Exam date and meeting time, etc. shall be sent along with Exam Admission Slip.

(2) Exam Venue

Fukushima University (1 Kanayagawa, Fukushima City)

\*Refer to the Information Map of the University at the end of this guide.

For details on the exam site, etc., please refer to the information on the "Exam Information" page (<http://nyushi.adb.fukushima-u.ac.jp/>) on the University's website.

**7. Preliminary Consultations for Applicants with Disabilities**

Applicants with illnesses, injuries, disabilities, etc. who need special consideration for taking exam and after admission shall notify Admissions Office at least one (1) month before the application.

**8. Security Export Control**

The University conducts security export control based on the "Foreign Exchange and Foreign Trade Law" to ensure that the content of education and research provided to international students does not interfere with the maintenance of international peace and security. Please note that the University may request changes in the content of the education / research you wish to pursue.

For details, please contact the Research Promotion and Regional Collaboration Division (+81-24-548-5248).

**9. Announcement of Successful Applicants**

Thursday, August 25, 2022, 11:00 a.m. in JST

To announce successful applicants, Examinee numbers will be posted on the "Exam Information" page of the University website ( <http://nyushi.adb.fukushima-u.ac.jp/> ), and "Letter of Acceptance" will be sent by postal mail or email to the successful applicants.

We will not answer inquiries about exam results by telephone, etc.

Please note that it may be difficult to connect to the Internet on the day of the announcement of successful applicants due to congestion in the Internet network line.

## 10. Enrollment Procedure and Matters of Note for Enrollment Procedure

- (1) Successful applicants shall complete the enrollment procedure during the following period by post. The details will be stated in the "Guide for Enrollment Procedure" to be sent to successful applicants.

### 【Admissions in October 2022】

#### 【Period for enrollment procedure】

**Monday, August 29 to Friday - September 2, 2022, 4:00 p.m. in JST**

\* If the applicant has not completed the enrollment procedure by the designated date, the applicant will lose the rights of a successful applicant.

\* The "Guide for Enrollment Procedure", which describes the enrollment procedures, various fees, etc., will be enclosed with the "Letter of Acceptance".

- (2) Admission and Tuition Fees

Admission Fee                      282,000 yen [as of now]

Tuition Fee

    First Semester                  267,900 yen [as of now]

    Second Semester                267,900 yen [as of now]

    Annual amount                  535,800 yen [as of now]

(Note)

- (1) If the admission and tuition fees are revised at the time of admission or during enrollment, the new admission and tuition fees shall be applied from the time of revision.

- (2) After completion of the enrollment procedure, if you decline admission due to special circumstances, please submit the "Admission Declination Form" (in a discretionary form) by September 30, 2022. Provided, however, that the admission fee shall not be returned. This includes the case where the applicant cannot satisfy the admission qualifications owing to repeating a school year, etc.

## 11. Reduction or Exemption of Admission and Tuition Fees

Students who have difficulties in paying Admission or Tuition Fees due to financial reasons and who are recognized as having outstanding academic capabilities may be exempted from the fees or permitted to pay deducted amount of the fees after going through a screening process.

For more details of exemption, etc. of admission and tuition fees, refer to the "Guide for Enrollment Procedure" to be issued to successful applicants.

Contact:    Student Affairs Division                      Phone: +81-24-548-8060

## 12. Matters of Note

- (1) Application procedure and exam date, etc. are subject to change depending on the situation. If there is any change, updated information shall be provided for all applicants.

- (2) Personal information of applicants

The University will obtain personal information of applicants from the submitted application documents and entrance exams. Obtained information shall be kept confidential and used only for the following purposes in compliance with Act on the Protection of Personal Information Held by Independent Administrative Agencies and the personal information protection regulations of Fukushima University.

○Use for operations of selecting applicants for admission (including procedures, such as statistical processing)

○Use for the Enrollment Procedure

○For the person who completed the enrollment procedure, we will use personal information for operations on instructions for study, student support, improvement of education, and collection of tuition fees after enrolling. For those who are exempt from admission and tuition fees and/or who applied for scholarships,

results of the entrance exam, etc. shall be used for selection and determination of persons to be exempt and receive scholarships.

In order to facilitate the application process, the University outsources some of its operations. In this case, we provide necessary personal information to the subcontractor, but we supervise the subcontractor appropriately, for example, by concluding a contract with the subcontractor regarding the appropriate handling of personal information.

(3) Contact for Entrance Exam

Fukushima University Admissions Office Phone: +81-24-548-8064

**13. Exam Fee Exemption for Those Affected by the Great East Japan Earthquake (including the Nuclear Power Plant Accident) and Other Serious Disasters**

In order to reduce the financial burden of those affected by the Great East Japan Earthquake, TEPCO's Fukushima Daiichi Nuclear Power Plant accident, and the severe disasters such as the heavy rain fall in and after FY2011, and to ensure opportunities for those affected to pursue higher education, the University will offer special measures to exempt exam fee for all entrance Exams in FY2022.

(Note: Please do not pay exam fee at the time of application if you would apply for exam fee exemption.)

(1) Eligible Person

An applicant for the University this year, who was recognized as falling under any of the categories below, is eligible for exam fee exemption.

1) A person who suffered damages in the area to which the Disaster Relief Act shall apply, which was designated in the Great East Japan Earthquake or a person who suffered damages by the disasters designated as "disasters of extreme severity" after FY2011, whose house the person or the major household income earner resided was certified as having fallen victim to full destruction, large-scale half destruction, half destruction, or flown out.

2) A person who was damaged in the area to which the Disaster Relief Act shall apply, which was designated in the Great East Japan Earthquake, or a person who suffered damage from the disasters designated as "disasters of extreme severity" after FY2011, whose major household income earner died or disappeared.

3) Those who resided or whose major household income earner resided in the "evacuation order zone (warning zone)," "planned evacuation zone," "emergency evacuation preparation zone," "specific spots recommended for evacuation," as of March 11, 2011, which were established after Tokyo Electric Power Company's Fukushima Daiichi Nuclear Power Plant accident, and who needed to evacuate in connection therewith.

For the details of the above exemption, see the table below.

Category	Approval of exam fee exemption (Approval:o, Disapproval:x)				
1) Total or half destruction of the house	Total destruction	Half destruction in a large scale	Half destruction	Flown out	Partial destruction
	o				x
2) Major household income earner died or disappeared	Major household income earner				Other than major household income earner
	o				x
3) Impact by the nuclear power plant accident	Evacuation order zone (warning zone)	Planned evacuation zone	Emergency evacuation preparation zone	Specific spots recommended for evacuation	Other areas
	o				x

Note: Zones are before re-zoning.

(2) Required Documents

An application for exam fee exemption, the following documents are required.

- 1) Application form for exam fee exemption (designated form attached hereto)
- 2) A copy of any one of the certificates set forth below:

If falling under (1)-1) above, "disaster victim certificate issued by the head of municipalities."

If falling under (1)-2) above, "document certifying the death or disappearance of the major household income earner."

If falling under (1)-3) above, "document certifying that the person is (was) under evacuation" (self-claiming document is acceptable).

(3) Submission Method and Period of Required Documents

Submit them together with application documents during the application period.

In this regard, if the application for exam fee exemption is made, do not pay exam fee at the time of application.

**14. Response to COVID-19 for the Entrance Exam**

1. Alternative Exam Arrangements

Those who made an application to the entrance exam of the Graduate School of Symbiotic Systems Science and Technology (Master's Program) to be conducted in FY2022 (hereafter, 'examinee') and are not able to take exam due to the following COVID-19-related reasons may request for an alternative exam opportunity.

(1) Target

- ① Examinee who was infected with COVID-19 and has not been confirmed by a doctor that he/she has recovered by exam day.
- ② Examinee specified by the Regional Health Center that he/she is a close contact of someone tested positive\*.  
\*Examinee who has been specified as a close contact but has no symptom may be allowed to take exam in a separate venue. (Refer also to 2. COVID-19 Response to the Close contacts with No Symptom.)
- ③ Examinee who has suspected symptoms such as body temperature of 37.5 degrees or higher, cough, etc., on exam day.

(2) Application Period

A day before exam and the day of exam (9:00 a.m. to 5:00 p.m.)

(3) Application Procedure

A) Examinee or a representative shall bring over the 'Exam Admission Slip,' a 'Medical Certificate (or an equivalent document)' that includes the medical treatment period and body temperature, and a filled-up application form for the alternative exam opportunity during the application period indicated below.

B) If neither examinee nor the representative can bring over the documents during the application period, a tentative application can be made over the phone. However, it is required to submit the 'Exam Admission Slip' and 'Medical Certificate (or an equivalent document)' by the following day of exam.

(Note) If it falls on Saturday or Sunday, the due date shall be replaced with Monday. If Monday falls on a national holiday, the due date shall be replaced with Tuesday.

(4) Approval to the Request for an Alternative Exam

Whether or not the application is approved shall be notified to each examinee.

(5) Alternative Exam Schedule and Venue

- ① The University shall specify alternative exam day/time.
- ② Venue of the alternative exam shall be the same as the original exam.

(6) Announcement of Successful Applicants and Enrolment Procedure

Those shall be notified individually to each alternative examinee.

2. COVID-19 Response to the Close Contacts with No Symptom

If an examinee identified by the regional healthcare center as a close contact of someone who tested positive meets all the following conditions, he/she may request the Admissions Office for an exam in a separate venue on the original exam day. If that is the case, consult as soon as possible with the Admissions Office by phone, in principle, by 10:00 a.m., two days before exam.

< Requirements to Take Exam >

- ① The result of the initial screening (PCR or other tests (administrative tests) conducted by the municipality or by a medical institution directed by the municipality) must be negative.
  - \* Until the results of the initial screening test are known, the applicant will not be allowed to take the exam, and will be required to take an alternative exam.
  - \* However, examinees from municipalities where administrative testing is not available may take exam if they meet the requirements of ② and ③ after negative confirmation using an antigen qualitative test kit, if possible.
- ② Be able to come to the venue by a private car so that he/she can avoid using public transportation (trains, buses, or taxis) and crowded places.
- ③ Have no symptom on the day of exam

(Note)

- ① When the request for an alternative exam is approved, the Admissions Office shall confirm the examinee's intention and send a 'permit' by email or post.
- ② On the alternative exam day, bring the 'permit' to the venue. Venue and meeting time shall be specified by the University, and notification shall be sent along with the 'permit.' At the meeting place, the University shall confirm if he/she has no symptoms.

When the examinee meets all requirements mentioned above, he/she shall be allowed to take exam in a separate venue with adequate preventive measures against COVID-19 infection. If the examinee has a fever or cough, etc., he/she shall not be allowed to take the alternative exam.

3. Requests to All Examinees

The University shall conduct the entrance exams taking adequate preventive measures against infection. All examinees are requested to take preventive measures against COVID-19 stated below.

<Until the Day of Exam>

- Manage your daily health conditions and avoid the risk of infection, such as avoiding non-essential outings, etc.
- Examinees who meet either of the following conditions shall not be allowed to take exam:
  - Those who were infected with COVID-19 and not yet recovered
  - Those who have been identified by a regional health center as a close contact of someone tested positive and have suspected symptoms (For close contacts with no symptom, refer to 2. COVID-19 Response to the Close Contacts with No Symptom)

<Exam Day>

- Make sure that your body temperature is lower than 37.5 degrees. If not, refrain from taking exam.
- Make sure to wear a mask in the venue except when the photo collation is processed.
- Wash your hands after using the restroom.
- Disinfect your hands with an alcohol-based sanitizer.
- If you feel unwell during Exam (fever, cough, etc.), contact exam supervisors.
- Exam room will be ventilated, so please bring clothing that can regulate your body temperature.
- Refrain from contact and conversation with others as much as possible before exam and during breaks.
- Wear a mask and refrain from talking with your friends on the train etc., during travel to exam.

<After Exam>

- If you got infected with COVID-19 within one week after the exam, make sure to report it to the University Admissions Office.
- If any infected person is identified at the exam venue, the University may provide the regional health center with the contact information, etc., of examinees. The information shall not be used for any purpose other than preventing of COVID-19 spread.

※Furthermore, depending on the status of further COVID-19, response to COVID-19 for the entrance exam in 2022 may be changed. If response is changed information will be updated on our website as appropriate.

(Information on entrance exams: <http://nyushi.adb.fukushima-u.ac.jp/>)

## **II-1. Features of the Major in Symbiotic Systems Science and Technology (Master's Program)**

### **1. Basic Philosophy of Organization of Education Programs**

The Major in Symbiotic Systems Science and Technology provides a variety of specialized education to develop advanced professional personnel in the new framework of "symbiotic systems science" to facilitate the resolution of problems in modern society. In order to clearly define the objectives of specialized learning, four distinct fields of study are established: Field of Mathematics and Information Systems, Field of Physics and Mechatronics, Field of Material and Energy Science, and Field of Life and Environmental Sciences.

In each field, a group of subjects essential to developing advanced professionals and researchers are offered, and a system is established in which specialization is recognized through the supervision of students by instructors specializing in respective subjects.

For better coordination between the needs of regional society and education at graduate school, the Major provides the "Community-based Practical Research" classes with the cooperation of research institutions in Fukushima Prefecture.

### **2. Requirements for Completion, Class Attendance, and Conferment of the Degree**

To those who study at the School for two years or longer and satisfy the following requirements for completion, "Master's Degree in Science and Engineering" will be conferred.

(Requirements for Completion and Class Attendance)

Complete more than 30 credits in total, which includes 14 credits of compulsory subjects ("Master's Thesis Study I, II, III, IV" and "Science and Technology Seminar I, II, III"), more than 16 credits of elective subjects in each field (more than 6 credits from the Basic Phase and more than 4 credits from the Advanced Phase); and successfully defend the Master's thesis by Faculty of Symbiotic System Science.

**3. Class Subjects and Credits to be Offered in the Major in Symbiotic Systems Science and Technology (Master's Program)**

Class Subjects and Credits to be Offered									
Field	Phase	Subject name	Year	Credits		Type of class		Remarks	
				Compul-sory	Elective	Lecture	Exercise		
Common	Basic	Symbiotic Systems	1		2	○			
Field of Mathematics and Information Systems	Basic	Advanced Nonlinear Analysis I	1		2	○			
		Applied Mathematics I	1		2	○			
		Computer Networks I	1		2	○			
		Intelligent Informatics I	1		2	○			
		Theory of Algorithms I	1		2	○			
		Management Information System and Business Intelligence I	1		2	○			
		Computer and Network Security I	1		2	○			
		Software Engineering I	1		2	○			
		Transportation and Logistics System I	1		2	○			
		Logistics System I	1		2	○			
		Management of Technology (MOT) I	1		2	○			
		Optimization of Production Systems I	1		2	○			
		Data Engineering I	1		2	○			
		Combinatorial Optimization I	1		2	○			
	Environmental Economic Systems I	1		2	○				
	Advanced	Advanced Nonlinear Analysis II	1		2		○		
		Applied Mathematics II	1		2		○		
		Computer Networks II	1		2		○		
		Intelligent Informatics II	1		2		○		
		Theory of Algorithms II	1		2		○		
		Management Information System and Business Intelligence II	1		2		○		
		Computer and Network Security II	1		2		○		
		Software Engineering II	1		2		○		
		Transportation and Logistics System II	1		2		○		
		Logistics System II	1		2		○		
		Management of Technology (MOT) II	1		2		○		
		Optimization of Production Systems II	1		2		○		
		Data Engineering II	1		2		○		
Combinatorial Optimization II		1		2		○			
Environmental Economic Systems II	1		2		○				
Community-based Practical Research I	2		2			○	Research institutes in Fukushima Pref.		
Community-based Practical Research II	2		2			○	Research institutes in Fukushima Pref.		
Field of Physics and Mechatronics	Basic	Human Medical Engineering I	1		2	○			
		Material System Design I	1		2	○			
		Solid State Physics I	1		2	○			
		Physics of the Universe and Particles I	1		2	○			
		Sensorimotor Engineering I	1		2	○			
		Power Electronics I	1		2	○			
		Energy Systems Engineering I	1		2	○			
		Mechatronics I	1		2	○			
		Human-Machine Interface I	1		2	○			

Class Subjects and Credits to be Offered								
Field	Phase	Subject name	Year	Credits		Type of class		Remarks
				Compul-sory	Elective	Lecture	Exercise	
Field of Physics and Mechatronics	Advanced	Human Medical Engineering II	1		2		○	
		Material System Design II	1		2		○	
		Solid State Physics II	1		2		○	
		Physics of the Universe and Particles II	1		2		○	
		Sensorimotor Engineering II	1		2		○	
		Power Electronics II	1		2		○	
		Energy Systems Engineering II	1		2		○	
		Mechatronics I	1		2		○	
		Human-Machine Interface II	1		2		○	
		Special Processing Technology	1		2		○	Research institutes in Fukushima Pref.
		Community-based Practical Research I	2		2		○	Research institutes in Fukushima Pref.
		Community-based Practical Research II	2		2		○	Research institutes in Fukushima Pref.
Field of Material and Energy Science	Basic	Physical Chemistry I	1		2	○		
		Inorganic Chemistry I	1		2	○		
		Organic Chemistry I	1		2	○		
		Synthetic Chemistry I	1		2	○		
		Analytical Chemistry I	1		2	○		
		Materials Science I	1		2	○		
		Bioengineering I	1		2	○		
		Solid State Inorganic Chemistry I	1		2	○		
		Industrial Production Systems I	1		2	○		
		Biomass Resource Engineering I	1		2	○		
		Renewable Energy	1		2	○		
		Energy Policy	1		2	○		
	Advanced	Physical Chemistry II	1		2		○	
		Inorganic Chemistry II	1		2		○	
		Organic Chemistry II	1		2		○	
		Synthetic Chemistry II	1		2		○	
		Analytical Chemistry II	1		2		○	
		Materials Science II	1		2		○	
		Bioengineering II	1		2		○	
		Solid State Inorganic Chemistry II	1		2		○	
		Industrial Production Systems II	1		2		○	
		Biomass Resource Engineering II	1		2		○	
		Wind Energy Technology	1		2		○	
		Solar Photovoltaic Power Generation	1		2		○	
		Special Lecture of Geothermal System	1		2		○	
		Industrial Materials	1		2		○	Research institutes in Fukushima Pref.
Community-based Practical Research I	2		2		○	Research institutes in Fukushima Pref.		
Community-based Practical Research II	2		2		○	Research institutes in Fukushima Pref.		

Class Subjects and Credits to be Offered								
Field	Phase	Subject name	Year	Credits		Type of class		Remarks
				Compul- sory	Elective	Lecture	Exercise	
Field of Life and Environmental Sciences	Basic	Plant Ecology I	1		2	○		
		Plant Diversity I	1		2	○		
		Environmental Planning I	1		2	○		
		Animal Diversity and Evolution I	1		2	○		
		Neurophysiology I	1		2	○		
		Psychophysiology I	1		2	○		
		Quaternary Geology I	1		2	○		
		River Basin Water Management I	1		2	○		
		Environment Modeling I	1		2	○		
		Bio-eco Engineering I	1		2	○		
		Experimental Psychology I	1		2	○		
		Soundscape Studies I	1		2	○		
		Watershed Hydrology I	1		2	○		
		Groundwater Basin Management and Planning I	1		2	○		
		Regional Planning I	1		2	○		
		Environmental Microbiology I	1		2	○		
	Advanced	Plant Ecology II	1		2		○	
		Plant Diversity II	1		2		○	
		Environmental Planning II	1		2		○	
		Animal Diversity and Evolution II	1		2		○	
		Neurophysiology II	1		2		○	
		Psychophysiology I	1		2		○	
		Quaternary Geology II	1		2		○	
		River Basin Water Management II	1		2		○	
		Environment Modeling II	1		2		○	
		Bio-eco Engineering II	1		2		○	
		Experimental Psychology II	1		2		○	
		Soundscape Studies II	1		2		○	
		Watershed Hydrology II	1		2		○	
		Groundwater Basin Management and Planning II	1		2		○	
		Regional Planning II	1		2		○	
		Environmental Microbiology II	1		2		○	
		Community-based Practical Research I	2		2		○	Research institutes in Fukushima Pref.
Community-based Practical Research II	2		2		○	Research institutes in Fukushima Pref.		
	Science and Engineering Seminar I	1	2			○		
	Science and Engineering Seminar II	1	2			○		
	Science and Engineering Seminar III	2	2			○		
	Master's Thesis Study I	1	2			○		
	Master's Thesis Study II	1	2			○		
	Master's Thesis Study III	2	2			○		
	Master's Thesis Study IV	2	2			○		

For the details of class subjects, refer to the Syllabus posted on the University website (<http://kyoumu.adb.fukushima-u.ac.jp>)

\*Some class subjects might be changed.

#### 4. List of Instructors and their Class Subjects (Some instructors might be changed.)

Field	Instructor	Class Subject
Field of Mathematics and Information Systems	Masaru Ishioka	Management of Technology (MOT) I & II
	Tomoyasu Ishikawa	Logistics System I & II
	Satoshi Utsumi	Computer Networks I & II
	Munenori Kakehi	Optimization of Production Systems I & II
	Hironori Kasai	Applied Mathematics I & II
	Hiroaki Kaminaga	Software Engineering I & II
	Nobuo Shinoda	Computer and Network Security I & II
	Dong Yanwen	Management Information Systems and Business Intelligence I & II
	Kazushige Nakagawa	Advanced Nonlinear Analysis I & II
	Shoichi Nakamura	Data Engineering I & II
	Akira Nakayama	Combinatorial Optimization I & II
	Daisuke Nishijima	Environmental Economic Systems I & II
	Yoshiyuki Higuchi	Transportation and Logistics System I & II
	Katsushige Fujimoto	Intelligent informatics I & II
	Kazuyuki Miura	Theory of Algorithms I & II
Field of Physics and Mechatronics	Shinichi Okanuma*	Power Electronics I & II
	Jun Kinugawa	Human-Machine Interface I & II
	Kunio Shimada	Energy Systems Engineering I & II
	Takayuki Takahashi	Mechatronics I & II
	Akira Tanaka	Human Medical Engineering I & II
	Kazuharu Bamba	Physics of the Universe and Particles I & II
	Ryoko Futami	Sensorimotor Engineering I & II
	Katsuhiko Yamaguchi	Solid State Physics I & II

\*shows instructors who do not serve as a Master's Thesis supervisor.

Field	Instructor	Class Subject	
Field of Material and Energy Science	Takashi Asada	Biomass Resource Engineering I & II	
	Hironori Ikuta	Solid State Inorganic Chemistry I & II	
	Shinji Inomata	Inorganic Chemistry I & II	
	Hironori Ohashi	Physical Chemistry I & II	
	Dai Oyama	Synthetic Chemistry I & II	
	Michio Sato	Industrial Production Systems I & II	
	Daisuke Sugimori	Bioengineering I & II	
	Yoshitaka Takagai	Analytical Chemistry I & II	
	Tohru Takayasu	Organic Chemistry I & II	
	Kazumasa Nakamura	Materials Science I & II	
	Field of Life and Environmental Sciences	Shingo Kaneko	Bio-eco Engineering I & II
		Seiki Kawagoe	River Basin Water Management I & II
Kota Kawasaki		Regional Planning I & II	
Katsuhiko Kimura		Plant Ecology I & II	
Takahide Kurosawa		Plant Diversity I & II	
Shinobu Goto		Environmental Planning I & II	
Yoshimasa Koyama*		Neurophysiology I & II	
Naoaki Shibasaki		Groundwater Basin Management and Planning I & II	
Madoka Takahara		Psychophysiology I & II	
Yuji Tsutsui		Experimental Psychology I & II	
Tadaaki Tsutsumi		Animal Diversity and Evolution I & II	
Yoshitaka Nagahashi		Quaternary Geology I & II	
Koji Nagahata		Soundscape Studies I & II	
Kenji Nanba		Environmental Microbiology I & II	
Yoshiyuki Yokoo		Watershed Hydrology I & II	
Ryuhei Yoshida	Environment Modeling I & II		

## **5. Cooperation with Collaborative Research Institutes in Fukushima Prefecture**

### **(1) Outline**

This Major provides practical graduate school education to develop personnel who are rooted in the region and can contribute to it through cooperation with research institutes in Fukushima Prefecture that have advanced research ability (Fukushima Technology Centre, Fukushima Prefectural Centre for Environmental Creation, Fukushima Agricultural Technology Centre, etc.)

### **(2) Purpose**

- 1) As a graduate school open to society, we recognize the challenges faced by the region, develop human resources who can make a practical contribution to the region, and vitalize graduate school education.
- 2) Promote more abundant, interdisciplinary, and specific education and research content.
- 3) Promote exchanges with researchers of research institutes, form seeds of joint research, and promote research.

### **(3) Implementation Content**

- 1) The classes for Community-based Practical Research I and II are provided using the facilities of research institutes in Fukushima Prefecture.
- 2) Classes in which students can study the challenges faced by the region practically are conducted with cooperation from researchers of the research institutes in Fukushima Prefecture.

## **6. Special Measures for Education Method**

In this major, in order to respond to the requests of working people who want to study at the graduate school, the Major adopts the system of opening classes day and night. For specific fields, students can complete the requirements for all the credits (30 credits) by taking two classes offered in the evening (18:00 to 19:30 hrs. and 19:40 to 21:10 hrs.). If you want to avail of this special provision, please consult before applying with the Admissions Office and the instructor from whom you want to receive instructions after admission.

## **7. Extended-Study Plan**

This is the system allowing students who have restrictions on time, as they are concurrently taking up jobs, etc., to study beyond the standard study period ("Extended-Study Period"). If a student is accepted as an Extended-Study Plan student, the student shall pay the tuition fee in each year at a divided amount, according to the permitted period of extended study (for example, in a Master's program, in general, a student completes the program in two (2) years, but under this system, the student can study for three (3) or four (4) years for the same total amount of tuition fee).

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## **8. Teacher's Certificate**

A person who has already acquired a Class 1 teacher's certificate for junior high school (Science, Industrial Arts) or a Class 1 teacher's certificate for high school (Science, Industry, Information), may acquire a specialized certificate of the same class as a Class 1 certificate if the person completes the credits specified in the Educational Personnel Certification Act and the Act Enforcement Regulations for this Major.

## **II-2. Features of the Major in Environmental Radioactivity (Master's Program)**

### **1. Basic Philosophy of Organization of Education Programs**

The Major in Environmental Radioactivity involves practical education and research that utilize the enhanced research infrastructure at the University and globally leads the field of environmental radioactivity. Besides, to develop advanced professional personnel with a global perspective, it provides specialized education, including the knowledge from a broader perspective and practical classes, in cooperation with research institutes and universities in Japan and overseas. In order to clearly define the professional learning objectives as a major, three distinct fields of study are established: Field of Ecology, Field of Modeling, and Field of Measurement.

In each field, a group of subjects constituting the core of education for advanced professional personnel and researchers are offered; and a system in which professionalism is clearly recognized through supervision of students by instructors in charge of subjects offered in each field is established.

Further, in order to develop professional personnel with practical ability in environmental radioactivity science, we utilize the research fields in Fukushima and the relationship between the Institute of Environmental Radioactivity and overseas institutes to offer "Practical Subjects" in the Basic Phase with a focus on field exercises, in which students can in the environmental radioactivity research and acquire the techniques used.

In all subjects, we provide sufficient classes in discussion form for the purpose of developing expression, dialogue, and English proficiency. To the new students who come from diverse backgrounds, we provide an introduction to each field as supplemental education.

### **2. Requirements for Completion, Class Attendance, and Conferment of the Degree**

For those who studied at the school for more than two years and satisfy the following requirements for completion, a "Master's Degree in Science and Engineering" will be conferred.

(Requirements for Completion and Class Attendance)

Complete more than 30 credits in total, which includes 24 credits of compulsory subjects ("Practical Subjects and "Common Subjects" in the Basic Phase as well as "Thesis Research" and compulsory subject in the Advanced Phase for each field) and 6 credits of elective subjects in the Advanced Phase for each field; and pass exam of Master's thesis by Symbiotic System Science and Technology.

**3. Class Subjects and Credits to be Offered in the Major in Environmental Radioactivity (Master's Program)**

Class Subjects and Credits to be Offered											
Phase	Category	Field	Subject name	Year	Credits		Type of class			Remarks	
					Compul-sory	Elective	Lecture	Exercise	Fieldwork/Experiment		
Basic	Practical	Common	Practicum in Environmental radioactivity science	1	1			○		Omnibus	
			Advanced Practicum in Environmental Radioactivity Science	1	1			○		Omnibus	
	Common		Radiochemical Analysis	1	2			○			Omnibus
			Radiation Dosimetry	1	2			○			
			Effects of Radiation Exposure	1	2			○			
			Radioecology	1	2			○			Omnibus
			Environmental Radioactivity Science I	1	2			○			Omnibus
			Environmental Radioactivity Science II	1	2			○			Omnibus
			Nuclear Disaster Studies	1	2			○			
Advanced	Applied	Field of Ecology	Aquatic Radioecology	1		2		○			
			Terrestrial Radioecology	1		2		○			
			Forest Radioactivity	1		2		○			
			Animal Ecology	1		2		○			
			Bio-eco Engineering I	1		2		○			Offered in the other major
			Bio-eco Engineering II	1		2			○		Offered in the other major
			Environmental Microbiology I	1		2		○			Offered in the other major
			Environmental Microbiology II	1		2			○		Offered in the other major
			Practicum in Ecological Radioactivity	2✕	2					○	Omnibus
			Field of Modeling	Dynamics of Radionuclides on Terrestrial Environment	1		2		○		
	Transport Phenomena	1			2		○				
	Radioactivity Modeling	1			2		○				
	Dynamics of Radioactivity in Ocean	1			2		○				
	River Basin Water Management I	1			2		○			Offered in the other major	
	River Basin Water Management II	1			2			○		Offered in the other major	
	Watershed Hydrology I	1			2		○			Offered in the other major	
	Watershed Hydrology II	1			2			○		Offered in the other major	
	Groundwater Basin Management and Planning I	1			2		○			Offered in the other major	
	Groundwater Basin Management and Planning II	1			2			○		Offered in the other major	
	Practicum in Radioactivity Modeling	2✕	2						○	Omnibus	

Class Subjects and Credits to be Offered										
Phase	Category	Field	Subject name	Year	Credits		Type of class			Remarks
					Compul-sory	Elective	Lecture	Exercise	Fieldwork/Experiment	
Advanced	Applied	Field of Measurement	Dynamics of Radioactivity in Terrestrial Biosphere	1		2	○			
			Separation Technology of Radioactive Materials	1		2	○			
			Radiation Measurement Engineering	1		2	○			
			Solid-State Physics I	1		2	○			Offered in the other major
			Solid-State Physics II	1		2		○		Offered in the other major
			Analytical Chemistry I	1		2	○			Offered in the other major
			Analytical Chemistry II	1		2		○		Offered in the other major
			Mechatronics I	1		2	○			Offered in the other major
			Mechatronics II	1		2		○		Offered in the other major
			Practicum in Radioactivity Measurement	2※	2				○	Omnibus
	Thesis	Common	Master's Thesis Study I	1	2			○		
			Master's Thesis Study II	2	2			○		
			Master's Thesis Study III	2	2			○		

“※” means if you are the enrolled student in October the year of course is the first year.

4. List of Instructors and their Class Subjects (Some instructors might be changed.)

Field	Instructor	Class Subject	
Basic	All instructors (Omnibus)	Practicum in Environmental Radioactivity Science/Advanced Practicum in Environmental Radioactivity Science	
Common	Alexei Konoplev	Nuclear Disaster Studies	
	Hirofumi Tsukada	Radiochemical Analysis	
	Vasyl Yoschenko	Effects of Radiation Exposure	
	Shigekazu Hirao	Radiation Dosimetry	
	All instructors (Omnibus)	Radioecology	
	All instructors (Omnibus)	Environmental Radioactivity Science I & II	
Field of Ecology	Hiroko Ishiniwa	Animal Ecology	
	Yasunori Igarashi	Forest Radioactivity	
	Shingo Kaneko	Bio-eco Engineering I & II	※
	Vasyl Yoschenko	Terrestrial Radioecology	
	Kenji Nanba	Environmental Microbiology I & II	※
	Toshihiro Wada	Aquatic Radioecology/Practicum in Ecological Radioactivity	
Field of Modeling	Hyo Takata	Dynamics of Radioactivity in Ocean	
	Seiki Kawagoe	River Basin Water Management I & II	※
	Naoaki Shibasaki	Groundwater Basin Management and Planning I & II	※
	Shigekazu Hirao	Transport Phenomena/Practicum in Radioactivity Modeling	
	Maksym Gusyev	Radioactivity Modeling	
	Yoshiyuki Yokoo	Watershed Hydrology I & II	※
	Yoshifumi Wakiyama	Dynamics of Radionuclides on Terrestrial Environment/Practicum in Radioactivity Modeling	
Field of Measurement	Ismail Rahman	Separation Technology of Radioactive Materials	
	Yoshitaka Takagai	Analytical Chemistry I & II	※
	Tatsuo Torii	Radiation Measurement Engineering	
	Takayuki Takahashi	Mechatronics I & II	※
	Hirofumi Tsukada	Dynamics of Radioactivity in Terrestrial Biosphere/Practicum in Radioactivity Measurement	
	Katsuhiko Yamaguchi	Solid-State Physics I & II	※

"※" shows instructors concurrently assigned to the Major in Symbiotic Systems Science and Technology.

5. List of Instructors Eligible to be the supervisor of the master's thesis (Some instructors might be changed.)

Field	Instructor		
Field of Ecology	Vasyl Yoschenko	Toshihiro Wada	Hiroko Ishiniwa Yasunori Igarashi
Field of Modeling	Alexei Konoplev Yoshifumi Wakiyama	Hyo Takata Maksym Gusyev	Shigekazu Hirao
Field of Measurement	Ismail Rahman	Hirofumi Tsukada	Tatsuo Torii

\*For more details, please visit the website of the Institute of Environmental Radioactivity.

( [http://www.ier.fukushima-u.ac.jp/index\\_e.html](http://www.ier.fukushima-u.ac.jp/index_e.html) )

## **6. Cooperation with the Collaborative Research Institutes of the Institute of Environmental Radioactivity**

### **(1) Outline**

This Major provides practical graduate school education in cooperation with the collaborative organizations (Japan: 12; Overseas: 23) of the Institute of Environmental Radioactivity at Fukushima University, having an advanced research level.

### **(2) Purpose**

- 1) Develop students' readiness to play active roles on a global scale by understanding various practical activities related to environmental radioactivity in the region and the world, and vitalize graduate school education.
- 2) Promote more abundant, interdisciplinary, and specific education and research content.
- 3) Promote exchanges with researchers of research institutes, form seeds of joint research, and promote research.

### **(3) Implementation Content**

Implemented as part of "Practicum in Environmental Radioactivity Science" and "Advanced Practicum in Environmental Radioactivity Science."

## **7. Extended-Study Plan**

This is the system allowing students who have restrictions on time, as they are concurrently taking up jobs, etc., to study beyond the standard study period ("Extended-Study Period"). If a student is accepted as an Extended-Study Plan student, the student shall pay the tuition fee in each year at a divided amount, according to the permitted period of extended study (for example, in a Master's Program, in general, a student completes the program in two (2) years, but under this system, the student can study for three (3) or four (4) years for the same total amount of tuition fee).

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