

**April 2027 and October 2026 Enrollment**

**Graduate School of Chemical Sciences and Engineering  
Hokkaido University**

**Ph.D Program  
(Doctoral Course)**

**Application Guidelines  
(Including Working Adult Admission and  
International Student Admission Information)**

If you have any questions regarding the application process, contact the office below.

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Hokkaido University (CSE Office)  
Kita 13, Nishi 8, Kita-ku, Sapporo, 060-8628 Japan  
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**April 2026**

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### **(Notice) Establishment of Chemical Reaction Design and Discovery Course (tentative name)**

Currently, there are three curriculum tracks: the Molecular Chemistry and Engineering Course, the Materials Chemistry and Engineering Course, and the Biological Chemistry and Engineering Course within the Division of Molecular Chemistry and Engineering Course. In addition to these three courses, the Chemical Reaction Design and Discovery Course (tentative name) is scheduled to be established in April 2027. This course will be based on chemical reaction development studies that integrate computational, informational, and experimental science.

For details on the faculty members expected to supervise students and their respective research areas, please refer to the “List of Supervising Faculty Members and Research Topics” at the end of this booklet.

Please note that applicants for admission in October 2026 should not choose their supervisor from the Chemical Reaction Design and Discovery Course (tentative name).

## **Overview of the Graduate School of Chemical Sciences and Engineering and the Division of Chemical Sciences and Engineering**

Hokkaido University reorganized the Department of Chemistry in its Graduate School of Science along with three chemistry-related divisions in its Graduate School of Engineering (the divisions of Chemical Process Engineering, Biotechnology and Macromolecular Chemistry, and Materials Chemistry) to form the Graduate School of Chemical Sciences and Engineering and the Division of Chemical Sciences and Engineering in April 2010 (admission quotas in master’s course: 129; admission quotas in doctoral course: 38).

In the Graduate School of Chemical Sciences and Engineering, chemistry and biochemistry professors of science and engineering who are affiliated with the Faculty of Science, Faculty of Engineering, Research Institute for Electronic Science, Institute for Genetic Medicine, Institute for Catalysis, and the Institute for Chemical Reaction Design and Discovery work closely together on research and education activities. Researchers affiliated with the National Institute for Materials Science, National Institute of Advanced Industrial Science and Technology, and RIKEN participate as instructors in related fields. These diversely experienced instructors offer not only specialized lectures in the Molecular Chemistry and Engineering Course, Materials Chemistry and Engineering Course, and Biological Chemistry and Engineering Course established within the Division of Chemical Sciences and Engineering but also a rich diversity of classes, including lectures in English. As a result, they are able to provide instruction and research guidance so that students will be able to view the field of chemistry from both the perspectives of science and engineering and contribute to society in related fields.

## **Admission Policy**

### **1. Educational goals**

By providing a systematic education that integrates research findings into the various fields of chemistry, such as molecular chemistry, materials chemistry, and biochemistry, the Graduate School of Chemical Sciences and Engineering strives to equip students with both basic and advanced, specialized knowledge in the field of chemistry; to cultivate individuals with broad-based knowledge, a strong sense of discernment, and the ability to use their knowledge in practical applications to meet the needs created by trends toward internationalization, advanced developments in science and technology, and interdisciplinary approaches; and to nurture students who have the depth of knowledge and skills necessary for conducting basic and applied research and who will therefore be well equipped to conduct innovative research going forward.

### **2. Ideal student image**

(Master's Course)

(1) Knowledge/skills

Prospective students are expected to have previously acquired advanced expertise in chemistry or related fields and undertaken original research and development.

(2) Critical-thinking, judgment, and expressive abilities

To respond to internationalization, the sophistication of science and technology, and interdisciplinization, the Graduate School requires prospective students to possess not only a basic background in related fields but also the motivation to acquire diverse knowledge and develop critical thinking, judgment abilities, and practical abilities.

(3) Collaboration

Prospective students are expected to be independent and motivated to learn and work in collaboration with people from various backgrounds.

(4) Prerequisites

Before enrolling in the Graduate School, students are expected to have knowledge and abilities at the undergraduate level in chemistry or related fields.

(Doctoral course)

(1) Knowledge/skills

Prospective students are expected to have previously acquired advanced expertise in chemistry or related fields and undertaken original research and development.

(2) Critical-thinking, judgment, and expressive abilities

To respond to internationalization, the sophistication of science and technology, and interdisciplinization, the Graduate School requires prospective students to possess not only a basic background in related fields but also the motivation to acquire diverse knowledge and develop critical thinking, judgment abilities, and practical abilities.

(3) Collaboration

Prospective students are expected to be independent and motivated to learn and work in collaboration with people from various backgrounds.

(4) Prerequisites

Before enrolling in the Graduate School, students are expected to have acquired knowledge and research abilities at the master's level in chemistry or related fields.

### 3. Basic policy for admission selection

At the Graduate School of Chemical Sciences and Engineering, we admit students who desire to specialize in the fields of science and engineering and obtain a master's or doctoral degree in the field of general chemistry, as well as students who seek a doctoral degree while working. Details such as the evaluation method are specified in the application guidelines. To measure language proficiency, which is indispensable for success on the international stage, we request the submission of scores for an English test that is conducted globally.

(1) Master's program

- General selection

Besides requiring comprehensive academic abilities related to the basics of chemistry, we conduct written and oral examinations related to specialization; evaluate basic specialized subjects in molecular chemistry, material chemistry, and biochemistry; and evaluate advanced, specialized knowledge in specialized subjects, as well as judgment ability and level of proficiency in the background of related fields, to ascertain practical ability. In addition, through oral examinations, we evaluate candidates' attitude of independence, willingness to collaborate with diverse people, motivation for the future, and ability to learn and research at the undergraduate level. Selection will be made by comprehensively judging the examination results, including language ability based on the English test score.

The written test may be exempted for those who have demonstrated excellent academic performance at their previous academic institution or who have outstanding achievements, such as research and development at companies.

- Entrance examination for international students

Considering the level of education overseas, we evaluate expertise and operational ability in basic or related fields of chemistry through an oral examination. Prospective students are expected to have an attitude of independence, be willing to collaborate with various people, and have motivation for the future. Language ability will also be evaluated based on the score of the English test.

(2) Doctoral program (general selection / examination for working adults / international student selection/ AGS selection)

An oral examination is conducted to evaluate expertise and operational ability in chemistry and related fields, as well as basic research abilities for advancing original research in the doctoral program, with the addition of presentation ability. Prospective students are expected to have an attitude of independence, be willing to collaborate with various people, and have motivation for the future. Language ability will also be evaluated based on the score of the English test.

# I. General Admission and Working Adult Admission

## 1. Admission Quotas

Division	No. of Admission Quota	School Web Site
Chemical Sciences and Engineering	38	<a href="http://www.cse.hokudai.ac.jp">www.cse.hokudai.ac.jp</a>

Notes:

The number of admission quotas includes several slots for working adult and international student applicants.

Individuals expecting to remain employed at the time of admission may apply through the working adult admission process.

## 2. Application Qualifications (for those who wish to be admitted in April 2027)

- (1) Individuals who have been awarded a master's degree or professional degree from a Japanese university (the term "professional degree" used hereinafter shall refer to the professional degree prescribed in Article 5-2 of the Degree Regulations [Ordinance of the Ministry of Education, Science and Culture No. 9 of 1953] pursuant to stipulations in Article 104, Clause 3, of the School Education Act); this includes those who are expected to be awarded such a degree by March 2027.
- (2) Individuals who have been awarded or are expected to be awarded a degree equivalent to a master's degree or professional degree from a foreign university by March 2027. (hereinafter referred to as "individuals from a foreign educational system")
- (3) Individuals who have been awarded or are expected to be awarded a degree equivalent to a master's degree or professional degree by March 2027 by taking a correspondence course in Japan offered by a foreign school (hereinafter referred to as "individuals from a foreign educational system via correspondence course")
- (4) Individuals who have completed a graduate school coursework of a foreign university at an educational institution in Japan and have been awarded a degree equivalent to a master's degree or professional degree. The institution needs to be positioned within the school education system of that foreign country as an educational body with a graduate school course and is required to be designated by the Japanese Minister of Education, Culture, Sports, Science, and Technology. This includes those who expect to be awarded such a degree by March 2027 (hereinafter referred to as "individuals who have completed coursework in a school designated as equivalent to a graduate school").
- (5) Individuals who have been awarded or are expected to be awarded a degree equivalent to a master's degree by March 2027 from the United Nations University as prescribed in Article 1(2) of the Act on Special Measures Incidental of Enforcement of the Agreement between the United Nations and Japan regarding the Headquarters of the United Nations University (Act No.72 of 1976), which was established under the December 11, 1972 resolution of the General Assembly of the United Nations (hereinafter referred to as "individuals from the UN University").
- (6) Individuals who have completed their formal education by taking a correspondence course through a non-Japanese university, an educational institution which received the designation by (4), or the United Nations University, who have passed an examination or a screening equivalent to the regulations by Article 16.2 in Standards for the Establishment of Graduate Schools, and who are recognized to have an academic ability equivalent to Master's degree holders by the Graduate School , or who will obtain it by March 2027 (hereinafter referred to as

"individuals from a foreign university who have been passed a Qualifying Examination").

(7) Individuals designated by the Minister of Education, Culture, Sports, Science, and Technology (1989 Notice No. 118, Ministry of Education, Science and Culture).

(a) Those who have graduated from a university; have conducted research for two years or longer at a university, research institution, etc.; and are recognized by this graduate school as possessing equivalent or greater academic capabilities as those of a person who has a master's degree based on its research achievements, etc.

(b) Those who have completed 16 years of school education in a foreign country or 16 years of school education of a foreign country by taking a correspondence course in Japan offered by a school of that foreign country; have conducted research for two years or longer at a university, research institution, etc.; and are recognized by this graduate school as possessing equivalent or greater academic capabilities as those of a person who has a master's degree based on its research achievements, etc.

(8) Applicants who are recognized by the graduate school as possessing the equivalent or greater academic skill as that of a person who has a master's degree or professional degree based on an individualized admission qualification investigation and who will be 24 years of age as of March 31, 2027 (hereinafter referred to as "individuals who apply through an individualized admission qualification investigation")

Notes:

1. See page 21 for application qualifications if you wish to be admitted in October 2026.
2. If you have any questions regarding the Application Qualifications, contact the Administration Office of the Graduate School of Chemical Sciences and Engineering (hereafter referred to as "CSE office").

### **3. Preliminary Review of Application Qualifications (Application Period, Etc.)**

**May 22 (Fri.) 9:00 a.m. - May 27 (Wed.) 5:00 p.m., 2026(Japan Standard Time)**

We will conduct a preliminary review of application qualifications before the admission examination if applicants fall under one of the following categories:

(7) Individuals designated by the Minister of Education, Culture, Sports, Science, and Technology

(8) Individuals who apply through an individualized admission qualification investigation

Individuals who fit one of the above-mentioned descriptions should submit Application Form of Preliminary Review of Qualifications, resume (prescribed forms) and other documents indicated in section 5 "Application Documents," with the exception of item No. 1 (Admission application, resume, examination admission card, and examinee photo card) , No.8 (English score reporting form and the score sheet of an English-language proficiency examination ) , No.10 (Envelope in which the examination admission card is to be mailed), and No.11 (Envelope to be used for the notification of examination results and other information) to the address specified in section "6. Where to Apply" by registered mail or bringing it to the office between the above-mentioned period. Applicants must contact the Administration Office (c-sougou@cse.hokudai.ac.jp) to request the application form well before the application deadline.

Notes:

The results of the preliminary review of application qualifications will be mailed out in mid-June 2026. Those who are deemed eligible to apply for the program must apply online (<https://e-apply.jp/e/hokudai-cse>), pay the examination fee as per section 4 "Application Method" and then mail required documents to the Administration Office.

Those who have passed the preliminary review of qualifications must submit documents listed in

section No.1 (admission application, resume, examination admission card, and examinee photo card) , No.8 (English score reporting form and the score sheet of an English-language proficiency examination ) , No.10 (Envelope in which the examination admission card is to be mailed), and No.11 (Envelope to be used for the notification of examination results and other information).

**Note that Japanese government (MEXT) scholarship students, China Scholarship Council (CSC) supported students and Hokkaido University Special Grant Program international students (as well as those who are expecting to receive one of these scholarships) may be exempt from paying the examination fee. If there is a possibility that you will be eligible for an exemption, please contact the CSE office in advance.**

#### **4. Application Method**

Our application process consists of three steps: (1) online application (<https://e-apply.jp/e/hokudai-cse>), (2) payment of the examination fee, (3) submission of application documents by mail. If you fail to complete any of these steps in the required timeframe, your application will not be processed and will be cancelled.

##### **<<Online Application and Payment Period>>**

**June 8 (Mon.) 10:00 a.m. - June 19 (Fri.) 5:00 p.m., 2026 (Japan Standard Time)**

##### **<<Examination Fee>>**

Applicants are required to pay the examination fee (30,000 yen) after registering online. Applicants must pay a service fee of 500 yen in addition to the examination fee.

Available payment methods include: credit card; China Pay; convenience store; bank or post office ATM. Please note that applicants cannot make a payment for the fee through teller. For further details on payment methods, see the application website.

Payment of examination fee is not required of individuals expecting to complete a master's degree program or a professional degree program in any of graduate schools of Hokkaido University.

Japanese government (MEXT) scholarship students, China Scholarship Council (CSC) supported students and Hokkaido University Special Grant Program international students (as well as those who are expecting to receive one of these scholarships) may be exempt from paying the examination fee. If there is a possibility that you will be eligible for an exemption, please contact the CSE office in advance.

The examination fee is non-refundable except for the following cases:

1. Applicants who paid the fee but cancelled their application (including cases where an application was rejected or application documents were not submitted by the deadline)
2. Applicants paid the fee more than once by mistake
3. Applicants who are exempt from the examination fee mistakenly paid the fee.

##### **<<Document Submission Period>>**

**June 15 (Mon.) - June 19 (Fri.), 2026**

After the payment of the examination fee, download the application form, resume, examination admission card, examinee photo card, and English score report form as a PDF from the application website. Then, print single-sided and submit together with other application documents. Please note that these forms become available after you complete the payment of the examination fee.

When mailing the application documents, be sure to attach the mailing address label (appearing on the last page of the PDF) to the mailing envelope and send the documents by registered mail. The postmark deadline of submission is June 19 (Fri.). Please note that you cannot submit in-person at the Administration Office.

## 5. Application Documents

(1) Individuals wishing to apply through the **general admission** process should submit following documents.

No.	Documents to Be Submitted	Application Qualifications			Notes
		(1)	(2) (3) (4) (5)	(6) (7) (8)	
1	Admission application, resume, examination admission card, and examinee photo card	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Prescribed forms
2	A recommendation letter from your prospective supervisor		△	△	Unspecified format This is required only for international student applicants. Excluding those in Application Qualification (1).
3	Summary of your master's thesis or an abstract of your research achievements	<input type="radio"/>	<input type="radio"/>		(a) Those who have been awarded any master's degree or any professional degree should provide a summary of their master's thesis or other materials equivalent to a master's thesis (unspecified format, approximately two A4-sized pages). (b) Those expecting to be awarded a master's degree should provide an abstract of the research conducted over the course of their master's program (up to 3,000 characters) or other equivalent materials.
4	List of research achievements and copies of key research papers			<input type="radio"/>	Unspecified format
5	Certificate verifying your research history			<input type="radio"/>	Unspecified format This certificate is to be issued by the university dean or research institute director or your research advisor and indicates your research topic and period of research.
6	Transcript from the applicant's (undergraduate) university and graduate school attended	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	(a) This is not required of graduates of the Graduate School of Chemical Sciences and Engineering of Hokkaido University. (b) Individuals applying based on the application qualification (8) must submit their transcript from the last school attended.

No.	Documents to Be Submitted	Application Qualifications				Notes
		(1)	(2) (3) (4) (5)	(6) (7) (8)		
7	Certificate of graduate school completion (or expected completion)	○	○	○		<p>(a) This is not required of graduates of the Graduate School of Chemical Sciences and Engineering of Hokkaido University.</p> <p>(b) Those who graduated or will graduate from a graduate school in People's Republic of China (excluding Hong Kong and Macau) must submit the following documents.</p> <p>Graduates:</p> <p>a. Online Verification Report of Higher Education Qualification Certificate (教育部学历证书电子注册备案表)</p> <p>b. Graduation Diploma (毕业证书) and Degree Diploma (学位证书)</p> <p>Expected Graduates:</p> <p>a. Online Verification Report of Student Record (教育部学籍在线验证报告)</p> <p>* Obtain documents "a" above by requesting it at "中国高等教育学历证书查询":  <a href="https://www.chsi.com.cn/xlcx/bgys.jsp">https://www.chsi.com.cn/xlcx/bgys.jsp</a>.</p> <p>Also, be sure that there are 15 or more days left until the expiration date of the online verification at the time of its submission.</p> <p>(c) Individuals applying based on the application qualification (6) must submit a confirmation letter pertaining to the Qualifying Examination.</p>
8	English score reporting form and the score sheet of an English-language proficiency examination (TOEFL test or TOEIC test)	○	○	○		Pursuant to section 7, "Submission of English Scores," applicants must submit the English score reporting form (prescribed form) and the score sheet of an English-language proficiency examination (TOEFL test or TOEIC test) taken in or after April 2024.
9	A recommendation letter from your academic advisor at the last university attended		△	△		<p>Unspecified format</p> <p>*This is required only for International students applicants. Excluding those in Application Qualification (1).</p> <p>*This is not required for those who are currently enrolled in Hokkaido University, and wish to study under the guidance of the same academic supervisor after enrolling in the doctoral course.</p>
10	Envelope in which the examination admission card is to be mailed	○	○	○		<p>Not required if applicants are not in Japan</p> <ul style="list-style-type: none"> <li>• Prepare an envelope (120mm x 235mm).</li> <li>• Download the "Label for admission ticket" from our website and print it in color.</li> <li>• Please write your postal code, address and name. Also, please seal 410 yen stamp on the envelope.</li> </ul>
11	Envelope to be used for the notification of examination results and other information	○	○	○		<p>Not required if applicants are not in Japan</p> <ul style="list-style-type: none"> <li>• Prepare an envelope (240mm x 332mm).</li> <li>• Download the "Label for results notification" from our website and print it in color.</li> <li>• Please fill out your postal code, address and name. No need to attach stamps.</li> </ul>
12	Envelope in which preliminary review results are to be mailed to the applicant			△		<p>Required only for Applicants of Preliminary Review of Application Qualifications (Not required if applicants are not in Japan.)</p> <ul style="list-style-type: none"> <li>• Prepare a self-addressed envelope (120mm x 235mm).</li> <li>• Please seal 110 yen stamp on the envelope.</li> </ul>

13	A copy of your Residence card	△	△	△	This is required only for international student applicants. Those who live outside of Japan should submit a copy of their passport.
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**Note:** ○ indicates that the document is required;

△ indicates that the document only needs to be submitted by specified individuals.

(2) **Working adult applicants** should submit the following documents:

No	Documents to Be Submitted	Notes
1	Admission application, resume, examination admission card, and examinee photo card	Prescribed forms
2	Letter of approval for taking the entrance examination	Unspecified format This is required only for those who are currently employed as public officials. The letter must be issued by someone who has authority over human resource matters at their place of employment.
3	List of research achievements and copies of key research papers	Unspecified format
4	Certificate verifying your research history	Unspecified format This certificate is to be issued by the university dean or research institute director or your research advisor and indicates your research topic and period of research.
5	Transcript from the last school attended (university or higher)	This is not required of graduates of the Graduate School of Chemical Sciences and Engineering of Hokkaido University.
6	Certificate of graduate school completion	(a) This is not required of graduates of the Graduate School of Chemical Sciences and Engineering of Hokkaido University. (b) Those who graduated or will graduate from a graduate school in People's Republic of China (excluding Hong Kong and Macau) must submit the following documents. Graduates: a. Online Verification Report of Higher Education Qualification Certificate (教育部学历证书电子注册备案表) b. Graduation Diploma (毕业证书) and Degree Diploma (学位证书) Expected Graduates: a. Online Verification Report of Student Record (教育部学籍在线验证报告) * Obtain documents "a" above by requesting it at "中国高等教育学历证书查询": <a href="https://www.chsi.com.cn/xlcx/bgys.jsp">https://www.chsi.com.cn/xlcx/bgys.jsp</a> . Also, be sure that there are 15 or more days left until the expiration date of the online verification at the time of its submission. (c) Individuals applying based on the application qualification (6) must submit a confirmation letter pertaining to the Qualifying Examination.
7	English score reporting form and the score sheet of an English-language proficiency examination (TOEFL test or TOEIC test)	Pursuant to section 7, "Submission of English Scores," applicants must submit the English score reporting form (prescribed form) and the score sheet of an English-language proficiency examination (TOEFL test or TOEIC test) taken in or after April 2024.
8	Envelope in which the examination admission card is to be mailed	Not required if applicants are not in Japan • Prepare an envelope (120mm x 235mm). • Download the "Label for admission ticket" from our website and print it in color. • Please write your postal code, address and name. Also, please seal 410 yen stamp on the envelope.

No	Documents to Be Submitted	Notes
9	Envelope to be used for the notification of examination results and other information	Not required if applicants are not in Japan <ul style="list-style-type: none"> <li>• Prepare an envelope (240mm x 332mm).</li> <li>• Download the “Label for results notification” from our website and print it in color.</li> <li>• Please fill out your postal code, address and name. No need to attach stamps.</li> </ul>
10	Envelope in which preliminary review results are to be mailed to the applicant	Required only for Applicants of Preliminary Review of Application Qualifications (Not required if applicants are not in Japan.) <ul style="list-style-type: none"> <li>• Prepare a self-addressed envelope (120mm x 235mm).</li> <li>• Please seal 110 yen stamp on the envelope.</li> </ul>
11	A copy of your Residence card	This is required only for foreign applicants. Those who live outside of Japan should submit a copy of their passport.

## 6. Where to Apply

Administration Office, Graduate School of Chemical Sciences and Engineering, Hokkaido University  
(CSE Office)

Kita 13, Nishi 8, Kita-ku, Sapporo, 060-8628 Japan

Tel: (+81)-11-706-7247

## 7. Submission of English Scores

Submit your English score reporting form (prescribed form) at the time of application. Also, submit your English score sheets as follows.

Either of the English-language proficiency examination score sheets listed in (a) or (b) below, **from examinations taken in or after April 2024**. In the case of (c), please consult with CSE Office in advance.

(a) TOEFL test official score sheet

(1) for test takers between April 1, 2024 and January 20, 2026

Submit a Test Taker Score Report sent to the examinee by the U.S. Educational Testing Service (ETS). A printout of test results posted online shall be considered invalid.

(2) for test takers after January 21, 2026

Select our institutional code “C327” on the TOEFL Access system, and arrange for the official score report to be sent directly to us.

(b) TOEIC test score sheet

Submit the Official Score Certificate or printed Digital official Score Certificate.

(c) Those who have graduated from a university where English is the primary language of instruction may omit their score sheet by submitting a medium of instruction certificate from their degree granting (undergraduate) university and graduate school. For more details, please contact the Administration Office.

### Important Notes

(a) If you submit more than one score sheet, the best score submitted shall be used.

(b) Scores for TOEFL ITP, TOEIC IP, TOEIC Bridge, etc. are invalid.

(c) English score sheet will be returned after the exam date.

(d) English score sheet should be submitted in its original A4 size without detaching it.

## 8. Selection Method

Admission decisions will be made based on a comprehensive review (oral examination, etc.) of the applicant's master's thesis or equivalent paper and the applicant's knowledge of the subject matter and foreign-language skills.

**For working adult applicants**, the review of the applicant's knowledge of the subject matter and foreign-language skills will be replaced with a review (oral examination, etc.) of the results of the applicant's research conducted as a working adult.

In the oral examination, the interview will be conducted, focusing mainly on an overview of the applicant's previous research and the research plan after enrollment in the Ph.D program, and the applicant will be evaluated on the originality of the research, expertise, and ability to conduct research.

## 9. Examination Schedule, Etc.

**August 5 (Wed.) or August 6 (Thu.), 2026**

Note:

The oral examination schedule, examination venue, and other details will be provided when the examination admission card is sent out.

Examination Date	Time	Examination Subject	Examination Venue
Aug. 5 (Wed.) or Aug. 6 (Thu.)	From 9:00 a.m. or from 1:00 p.m.	Oral examination	To be specified when the examination admission card is sent out

## 10. Announcements of the Result

The examination admission numbers of those who passed the examination will be posted in the entrance hall of the School of Engineering and our website (<https://www.cse.hokudai.ac.jp/>) around 10:00 a.m. on September 4 (Fri.), 2026. In addition, all examinees will be notified of their results individually (results will not be provided over the phone).

## 11. Enrollment Procedures and Expenses

Details regarding enrollment procedures are provided in the notifications mailed to those who have been accepted.

Enrollment fee: ¥282,000

Note:

**Not required of students continuing into this doctoral course from a master's degree program or professional degree program in a graduate school of Hokkaido University.**

First semester tuition for academic year 2027: ¥267,900 (estimated)

Total annual amount: ¥535,800 (estimated)

Notes:

1. If any revision is made while the student is enrolled, the new amount will be applied from the time of the revision.
2. If the enrollment fee is not paid during the admission procedure period, the applicant will be treated as having no intent to enroll.

3. If tuition is not paid for one semester, the student will be expelled, and his/her record of enrollment will be deleted. If you are having problems paying tuition due to financial hardship, you may be eligible for a tuition exemption or deferral.

## 12. Important Notes

- (1) Be sure to bring your examination admission card with you on the day of the entrance examination and place it on your desk.
- (2) Incomplete applications may not be accepted. Be sure that there are no errors in your application.
- (3) If the name on your certificate of graduation or other documents is different from your current name, for example, your surname has changed, attach a certificate of family registry or other official document that verifies the change.
- (4) If any falsified information is found in the application documents, the applicant's admission may be revoked.
- (5) Submitted documents are not returnable to the applicants for any reason.
- (6) Our graduate school generally does not allow dual enrollment.

## 13. Long-Term Study Program

The long-term study program is available to students who want to study systematically over a period of time longer than the standard course term (three years for a doctoral course) due to full-time employment or other circumstances that limit the time to attend classes and conduct research. Students must apply for this program and receive the approval from the graduate school. Once approved, the student will pursue a systematic course of study over a specified length of time. Those wishing to take advantage of this system should carefully read and follow the application instructions in the section entitled "Information on the Long-Term Study Program" on page 24. Be sure to consult with your prospective academic advisor in advance regarding this program.

## 14. Others

- (1) Examination admission cards will be sent out in **mid-July 2026** to those whose applications have been accepted.
- (2) Applicants who are physically disabled and who may need special accommodations to take examinations and attend classes should notify the CSE office of their condition by June 19 (Fri.), 2026.

## 15. Notes to foreign applicants

- (1) About your visa and residential status

Studying at Hokkaido University as an international student requires you to obtain a 'Student' visa. Please note in advance that the 'Certificate of Eligibility (COE)' needed for a 'Student' visa application may take more than 3 months to be issued after its application. Please refer to our university website, too.

Japanese: <https://intl-student-handbook.oia.hokudai.ac.jp/preparation/visa>

English: <https://intl-student-handbook.oia.hokudai.ac.jp/en/preparation-en/visa-en>

- (2) About Security Export Control

Hokkaido University conducts strict screenings on exporting goods and providing skills (including incoming international students) by establishing 'Hokkaido University Security Export Control Regulations (北海道大学安全保障輸出管理規程)' based on 'Foreign Exchange and Foreign Trade Act (外国為替及び外国貿易法)'.

In case you are subject to our regulations, you may be restricted from learning or researching

your desired fields of education.

For further details of regulations regarding Security Export Control, please refer to the Ministry of Economy, Trade and Industry website below.

Ministry of Economy, Trade and Industry (METI) website: <https://www.meti.go.jp/policy/ampo/>

## II. International Student Admission

### 1. Admission Quotas

Division	No. of Admission Quota	School Web Site
Chemical Sciences and Engineering	Several	<a href="http://www.cse.hokudai.ac.jp">www.cse.hokudai.ac.jp</a>

### 2. Application Qualifications (for those who wish to be admitted in April 2027)

Individuals who are recognized as possessing the skills and capabilities required based on a recommendation from a specialized professor (hereinafter referred to as “the prospective supervisor”) in this graduate school whom the applicant would like to have as his/her research advisor after enrollment and individuals who fulfill one of the following application qualifications:

- (1) Individuals who have been awarded or are expected to be awarded a degree equivalent to a master’s degree or professional degree from a foreign university by March 2027.
- (2) Individuals who have been awarded or are expected to be awarded a degree equivalent to a master’s degree or professional degree by March 2027 by taking a correspondence course in Japan offered by a foreign school
- (3) Individuals who have completed a graduate school coursework of a foreign university at an educational institution in Japan and have been awarded a degree equivalent to a master’s degree or professional degree. The institution needs to be positioned within the school education system of that foreign country as an educational body with a graduate school course and is required to be designated by the Japanese minister of education, culture, sports, science, and technology. This includes those who are expected to be awarded such a degree by March 2027.
- (4) Individuals who have been awarded or are expected to be awarded a degree equivalent to a master’s degree by March 2027 from the United Nations University as prescribed in Article 1(2) of the Act on Special Measures Incidental of Enforcement of the Agreement between the United Nations and Japan regarding the Headquarters of the United Nations University (Act No.72 of 1976), which was established under the December 11, 1972 resolution of the General Assembly of the United Nations.
- (5) Individuals who have completed their formal education by taking a correspondence course through a non-Japanese university, an educational institution which received the designation by (3), or the United Nations University, who have passed an examination or a screening equivalent to the regulations by Article 16.2 in Standards for the Establishment of Graduate Schools, and who are recognized to have an academic ability equivalent to Master’s degree holders by the Graduate School , or who will obtain it by March 2027.
- (6) Individuals designated by the Minister of Education, Culture, Sports, Science, and Technology (1989 Notice No. 118, Ministry of Education, Science and Culture), i.e., individuals who have completed 16 years of school education in a foreign country or 16 years of school education of a foreign country by taking a correspondence course in Japan offered by a school of that foreign country; have conducted research for two years or longer at a university, research institution, etc.; and are recognized by this graduate school as possessing equivalent or greater academic capabilities as those of a person who has a master’s degree based on its research findings, etc.
- (7) Applicants who are recognized by the graduate school as possessing the equivalent or greater academic skill as that of a person who has a master’s degree or professional degree based on an individualized admission qualification investigation and who will be 24 years of age as of March 31,2027.

Notes:

1. **Applicants must contact their prospective supervisor in advance.**
2. **See page 21 for application qualifications if you wish to be admitted in October 2026.**
3. **If you have any questions regarding the Application Qualifications, contact the Administration Office of the Graduate School of Chemical Sciences and Engineering (hereafter referred to as “CSE office”).**

### **3. Preliminary Review of Application Qualifications (Application Period, Etc.) May 22 (Fri.) 9:00 a.m. - May 27 (Wed.) 5:00 p.m., 2026 (Japan Standard Time)**

We will conduct a preliminary review of application qualifications before the admission examination if applicants fall under either (6) or (7).

Individuals who fit one of the categories must submit Application Form of Preliminary Review of Qualifications and Resume (prescribed forms) and documents indicated in section 5, “Application Documents,” with the exception of item No. 1 (Admission application, resume, examination admission card, and examinee photo card), No.6 (English score reporting form and the score sheet of an English-language proficiency examination), No.8 (Envelope in which the examination admission card is to be mailed), and No.9 (Envelope to be used for the notification of examination results and other information) to the address specified in section “6. Where to Apply” by registered mail or bringing it to the office between the above-mentioned period. Applicants must contact the Administration Office ([c-sougou@cse.hokudai.ac.jp](mailto:c-sougou@cse.hokudai.ac.jp)) to request the application form well before the application deadline.

Notes:

The results of the preliminary review of application qualifications will be mailed out in mid-June 2026. Those who are deemed eligible to apply for the program must apply online (<https://e-apply.jp/e/hokudai-cse>), pay the examination fee as per section 4 “Application Method” and then mail required documents to the Administration Office.

Those who have passed the preliminary review of qualifications must submit documents listed in section No.1 (admission application, resume, examination admission card, and examinee photo card), No.6 (English score reporting form and the score sheet of an English-language proficiency examination), No.8 (Envelope in which the examination admission card is to be mailed), and No.9 (Envelope to be used for the notification of examination results and other information)

**Note that Japanese government (MEXT) scholarship students, China Scholarship Council (CSC) supported students and Hokkaido University Special Grant Program international students (as well as those who are expecting to receive one of these scholarships) may be exempt from paying the examination fee. If there is a possibility that you will be eligible for an exemption, please contact the CSE office in advance.**

### **4. Application Method**

Our application process consists of three steps: (1) online application (<https://e-apply.jp/e/hokudai-cse>), (2) payment of the examination fee, (3) submission of application documents by mail. If you fail to complete any of these steps in the required timeframe, your application will not be processed and will be cancelled.

**<<Online Application and Payment Period>>**

**June 8 (Mon.) 10:00 a.m. - June 19 (Fri.) 5:00 p.m., 2026 (Japan Standard Time)**

### <<Examination Fee>>

Applicants are required to pay the examination fee (30,000 yen) after registering online. Applicants must pay a service fee of 500 yen in addition to the examination fee.

Available payment methods include: credit card; China Pay; convenience store; bank or post office ATM. Please note that applicants cannot make a payment for the fee through teller. For further details on payment methods, see the application website.

Japanese government (MEXT) scholarship students, China Scholarship Council (CSC) supported students and Hokkaido University Special Grant Program international students (as well as those who are expecting to receive one of these scholarships) may be exempt from paying the examination fee. If there is a possibility that you will be eligible for an exemption, please contact the CSE office in advance.

The examination fee is non-refundable except for the following cases:

1. Applicants who paid the fee but cancelled their application (including cases where an application was rejected or application documents were not submitted by the deadline)
2. Applicants paid the fee more than once by mistake
3. Applicants who are exempt from the examination fee mistakenly paid the fee.

### <<Document Submission Period>>

**June 15 (Mon.) - June 19 (Fri.), 2026**

After the payment of the examination fee, download the application form, resume, examination admission card, examinee photo card, and English score report form as a PDF from the application website. Then, print single-sided and submit together with other application documents.

Please note that these forms become available after you complete the payment of the examination fee.

When mailing the application documents, be sure to attach the mailing address label (appearing on the last page of the PDF) to the mailing envelope and send the documents by registered mail. The postmark deadline of submission is June 19 (Fri.). Please note that you cannot submit in-person at the Administration Office.

## 5. Application Documents

No.	Documents to Be Submitted	Notes
1	Admission application, resume, examination admission card, and examinee photo card	Prescribed forms
2	A recommendation letter from your prospective supervisor	Unspecified format
3	Summary of your master's thesis or an abstract of your research achievements	<p>(a) Those who have been awarded any master's degree or any professional degree should provide a summary of their master's thesis or other materials equivalent to a master's thesis (unspecified format, approximately two A4-sized pages).</p> <p>(b) Those expecting to be awarded a master's degree should provide an abstract of the research conducted over the course of their master's program (up to 3,000 characters) or other equivalent materials.</p>
4	A transcript from the applicant's (undergraduate) university and graduate school attended	
5	A certificate of graduation from your (undergraduate) university and a certificate of graduate school completion (or expected completion) or a degree certificate	<p>*If you are relevant to the both (a) and (b), submit all of the required documents according to (a) and (b).</p> <p>(a) Those who graduated from a university in People's Republic of China (excluding Hong Kong and Macau) must submit the following documents:</p> <ol style="list-style-type: none"> <li>Online Verification Report of Higher Education Qualification Certificate (教育部学历证书电子注册备案表)</li> <li>Graduation Diploma (毕业证书) and Degree Diploma (学位证书)</li> </ol> <p>* Obtain documents "a" above by requesting it at "中国高等教育学历证书查询": <a href="https://www.chsi.com.cn/xlcx/bgys.jsp">https://www.chsi.com.cn/xlcx/bgys.jsp</a>. Also, be sure that there are 15 or more days left until the expiration date of the online verification at the time of its submission.</p> <p>(b) Those who graduated or will graduate from a graduate school in China (excluding Hong Kong and Macau) must submit the following documents.</p> <p>Graduates:</p> <ol style="list-style-type: none"> <li>Online Verification Report of Higher Education Qualification Certificate (教育部学历证书电子注册备案表)</li> <li>Graduation Diploma (毕业证书) and Degree Diploma (学位证书)</li> </ol> <p>Expected Graduates:</p> <ol style="list-style-type: none"> <li>Online Verification Report of Student Record (教育部学籍在线验证报告)</li> </ol> <p>* Obtain documents "a" above by requesting it at "中国高等教育学历证书查询": <a href="https://www.chsi.com.cn/xlcx/bgys.jsp">https://www.chsi.com.cn/xlcx/bgys.jsp</a>. Also, be sure that there are 15 or more days left until the expiration date of the online verification at the time of its submission.</p> <p>(c) Individuals applying based on the application qualification (5) must submit a confirmation letter pertaining to the Qualifying Examination.</p>
6	English score reporting form and the score sheet of an English-language proficiency examination (TOEFL test or TOEIC test)	Pursuant to section 7, "Submission of English Scores," applicants must submit the English score reporting form (prescribed form) and the score sheet of an English-language proficiency examination (TOEFL test or TOEIC test) taken in or after April 2024.

No.	Documents to Be Submitted	Notes
7	Letter of recommendation from your academic advisor at the last school attended	Unspecified format This is not required for those who are currently enrolled in Hokkaido University, and wish to study under the guidance of the same academic supervisor after enrolling in the doctoral course.
8	Envelope in which the examination admission card is to be mailed	Not required if applicants are not in Japan <ul style="list-style-type: none"> <li>• Prepare an envelope (120mm x 235mm).</li> <li>• Download the “Label for admission ticket” from our website and print it in color.</li> <li>• Please write your postal code, address and name. Also, please seal 410 yen stamp on the envelope.</li> </ul>
9	Envelope to be used for the notification of examination results and other information	Not required if applicants are not in Japan <ul style="list-style-type: none"> <li>• Prepare an envelope (240mm x 332mm).</li> <li>• Download the “Label for results notification” from our website and print it in color.</li> <li>• Please fill out your postal code, address and name. No need to attach stamps.</li> </ul>
10	Envelope in which preliminary review results are to be mailed to the applicant	Required only for Applicants of Preliminary Review of Application Qualifications (Not required if applicants are not in Japan) <ul style="list-style-type: none"> <li>• Prepare a self addressed envelope (120mm x 235mm).</li> <li>• Please seal 110 yen stamp on the envelope.</li> </ul>
11	A copy of your Residence card	Those who live outside of Japan should submit a copy of their passport.
12	Other required documents from the accepting professor	

## 6. Where to Apply

Administration Office, Graduate School of Chemical Sciences and Engineering, Hokkaido University (CSE Office)

Kita 13, Nishi 8, Kita-ku, Sapporo, 060-8628 Japan

Tel: (+81)-11-706-7247

## 7. Submission of English Scores

Submit your English score reporting form (prescribed form) at the time of application. Also, submit your English score sheets as follows.

Either of the English-language proficiency examination score sheets listed in (a) or (b) below, **from examinations taken in or after April 2024**. In the case of (c), please consult with CSE Office in advance.

### (a) TOEFL test official score sheet

(1) for test takers between April 1, 2024 and January 20, 2026

Submit a Test Taker Score Report sent to the examinee by the U.S. Educational Testing Service (ETS). A printout of test results posted online shall be considered invalid.

(2) for test takers after January 21, 2026

Select our institutional code “C327” on the TOEFL Access system, and arrange for the official score report to be sent directly to us.

### (b) TOEIC test score sheet

Submit the Official Score Certificate or printed Digital official Score Certificate.

- (c) Those who have graduated from a university where English is the primary language of instruction may omit their score sheet by submitting a medium of instruction certificate from their degree granting (undergraduate) university and graduate school. For more details, please contact the Administration Office.

#### Important Notes

- (a) If you submit more than one score sheet, the best score submitted shall be used.  
(b) Scores for TOEFL ITP, TOEIC IP, TOEIC Bridge, etc. are invalid.  
(c) English score sheet will be returned after the exam date.  
(d) English score sheet should be submitted in its original A4 size without detaching it.

### **8. Selection Method**

Admission decisions will be made based on a comprehensive review (oral examination, etc.) of the applicant's master's thesis or equivalent paper and the applicant's knowledge of the subject matter and foreign-language skills.

In the oral examination, the interview will be conducted, focusing mainly on an overview of the applicant's previous research and the research plan after enrollment in the Ph.D program, and the applicant will be evaluated on the originality of the research, expertise, and ability to conduct research.

### **9. Examination Schedule, Etc.**

**August 5 (Wed.) and August 6 (Thu.), 2026**

Examination subjects are based on the general admission.

### **10. Announcements of the Result**

The examination admission numbers of those who passed the examination will be posted in the entrance hall of the School of Engineering and our website (<https://www.cse.hokudai.ac.jp/>) around 10:00 a.m. on September 4 (Fri.), 2026. In addition, all examinees will be notified of their results individually (results will not be provided over the phone).

### **11. Enrollment Procedures and Expenses**

Details regarding enrollment procedures are provided in the notifications mailed to those who have been accepted.

Enrollment fee: ¥282,000

First semester tuition for academic year 2027: ¥267,900 (estimated)

Total annual amount: ¥535,800 (estimated)

Notes:

1. If any revision is made while the student is enrolled, the new amount will be applied from the time of the revision.
2. If the enrollment fee is not paid during the admission procedure period, the applicant will be treated as having no intent to enroll.
3. If tuition is not paid for one semester, the student will be expelled, and his/her record of enrollment will be deleted. If you are having problems paying tuition due to financial hardship, you may be eligible for a tuition exemption or deferral.

### **12. Important Notes**

- (1) Be sure to bring your examination admission card with you on the day of the entrance examination

and place it on your desk.

- (2) Incomplete applications may not be accepted. Be sure that there are no errors in your application.
- (3) If any falsified information is found in the application documents, the applicant's admission may be revoked.
- (4) Submitted documents are not returnable to the applicants for any reason.
- (5) Our graduate school generally does not allow dual enrollment.

### **13. Long-Term Study Program**

Our graduate school has a long-term study program. Those wishing to take advantage of this system should carefully read and follow the application instructions in the section entitled "Information on the Long-Term Study Program" on page 24.

### **14. Others**

- (1) Examination admission cards will be sent out around in **mid-July 2026** to those whose applications have been accepted (with the exception of those who are applying for a special program approved by this graduate school).
- (2) Applicants who are physically disabled and who may need special accommodations to take examinations and attend classes should notify the CSE office of their condition by June 19 (Fri.), 2026.

### **15. Notes to foreign applicants**

- (1) About your visa and residential status

Studying at Hokkaido University as an international student requires you to obtain a 'Student' visa. Please note in advance that the 'Certificate of Eligibility (COE)' needed for a 'Student' visa application may take more than 3 months to be issued after its application. Please refer to our university website, too.

Japanese: <https://intl-student-handbook.oia.hokudai.ac.jp/preparation/visa>

English: <https://intl-student-handbook.oia.hokudai.ac.jp/en/preparation-en/visa-en>

- (2) About Security Export Control

Hokkaido University conducts strict screenings on exporting goods and providing skills (including incoming international students) by establishing 'Hokkaido University Security Export Control Regulations (北海道大学安全保障輸出管理規程)' based on 'Foreign Exchange and Foreign Trade Act (外国為替及び外国貿易法)'.

In case you are subject to our regulations, you may be restricted from learning or researching your desired fields of education.

For further details of regulations regarding Security Export Control, please refer to the Ministry of Economy, Trade and Industry website below.

Ministry of Economy, Trade and Industry (METI) website: <https://www.meti.go.jp/policy/ampo/>

## Application Qualifications (for October Enrollment)

\*For any questions, please contact Administration Office at Graduate School of Chemical Science and Engineering

### I. General Admission and Working Adult Admission

- (1) Individuals who have been awarded a master's degree or professional degree from a Japanese university (the term "professional degree" used hereinafter shall refer to the professional degree prescribed in Article 5-2 of the Degree Regulations [Ordinance of the Ministry of Education, Science and Culture No. 9 of 1953] pursuant to stipulations in Article 104, Clause 3, of the School Education Act); this includes those who are expected to be awarded such a degree by September 2026.
- (2) Individuals who have been awarded or are expected to be awarded a degree equivalent to a master's degree or professional degree from a foreign university by September 2026. (hereinafter referred to as "individuals from a foreign educational system")
- (3) Individuals who have been awarded or are expected to be awarded a degree equivalent to a master's degree or professional degree by September 2026 by taking a correspondence course in Japan offered by a foreign school (hereinafter referred to as "individuals from a foreign educational system via correspondence course")
- (4) Individuals who have completed a graduate school coursework of a foreign university at an educational institution in Japan and have been awarded a degree equivalent to a master's degree or professional degree. The institution needs to be positioned within the school education system of that foreign country as an educational body with a graduate school course and is required to be designated by the Japanese Minister of Education, Culture, Sports, Science, and Technology. This includes those who expect to be awarded such a degree by September 2026 (hereinafter referred to as "individuals who have completed coursework in a school designated as equivalent to a graduate school").
- (5) Individuals who have been awarded or are expected to be awarded a degree equivalent to a master's degree by September 2026 from the United Nations University as prescribed in Article 1(2) of the Act on Special Measures Incidental of Enforcement of the Agreement between the United Nations and Japan regarding the Headquarters of the United Nations University (Act No.72 of 1976), which was established under the December 11, 1972 resolution of the General Assembly of the United Nations (hereinafter referred to as "individuals from the UN University").
- (6) Individuals who have completed their formal education by taking a correspondence course through a non-Japanese university, an educational institution which received the designation by (4), or the United Nations University, who have passed an examination or a screening equivalent to the regulations by Article 16.2 in Standards for the Establishment of Graduate Schools, and who are recognized to have an academic ability equivalent to Master's degree holders by the Graduate School, or who will obtain it by September 2026 (hereinafter referred to as "individuals from a foreign university who have been passed a Qualifying Examination").
- (7) Individuals designated by the Minister of Education, Culture, Sports, Science, and Technology (1989 Notice No. 118, Ministry of Education, Science and Culture).
  - (a) Those who have graduated from a university; have conducted research for two years or longer at a university, research institution, etc.; and are recognized by this graduate school as possessing equivalent or greater academic capabilities as those of a person who has a master's degree based on its research achievements, etc.
  - (b) Those who have completed 16 years of school education in a foreign country or 16 years of school education of a foreign country by taking a correspondence course in Japan offered by a

school of that foreign country; have conducted research for two years or longer at a university, research institution, etc.; and are recognized by this graduate school as possessing equivalent or greater academic capabilities as those of a person who has a master's degree based on its research achievements, etc.

- (8) Applicants who are recognized by the graduate school as possessing the equivalent or greater academic skill as that of a person who has a master's degree or professional degree based on an individualized admission qualification investigation and who will be 24 years of age as of September 30, 2026 (hereinafter referred to as "individuals who apply through an individualized admission qualification investigation")

## **II. International Student Admission**

Individuals who are recognized as possessing the skills and capabilities required based on a recommendation from a specialized professor (hereinafter referred to as "the accepting professor") in this graduate school whom the applicant would like to have as his/her research advisor after enrollment and individuals who fulfill one of the following application qualifications:

- (1) Individuals who have been awarded or are expected to be awarded a degree equivalent to a master's degree or professional degree from a foreign university by September 2026.
- (2) Individuals who have been awarded or are expected to be awarded a degree equivalent to a master's degree or professional degree by September 2026 by taking a correspondence course in Japan offered by a foreign school
- (3) Individuals who have completed a graduate school coursework of a foreign university at an educational institution in Japan and have been awarded a degree equivalent to a master's degree or professional degree. The institution needs to be positioned within the school education system of that foreign country as an educational body with a graduate school course and is required to be designated by the Japanese minister of education, culture, sports, science, and technology. This includes those who are expected to be awarded such a degree by September 2026.
- (4) Individuals who have been awarded or are expected to be awarded a degree equivalent to a master's degree by September 2026 from the United Nations University as prescribed in Article 1(2) of the Act on Special Measures Incidental of Enforcement of the Agreement between the United Nations and Japan regarding the Headquarters of the United Nations University (Act No.72 of 1976), which was established under the December 11, 1972 resolution of the General Assembly of the United Nations.
- (5) Individuals who have completed their formal education by taking a correspondence course through a non-Japanese university, an educational institution which received the designation by (3), or the United Nations University, who have passed an examination or a screening equivalent to the regulations by Article 16.2 in Standards for the Establishment of Graduate Schools, and who are recognized to have an academic ability equivalent to Master's degree holders by the Graduate School , or who will obtain it by September 2026.
- (6) Individuals designated by the Minister of Education, Culture, Sports, Science, and Technology (1989 Notice No. 118, Ministry of Education, Science and Culture), i.e., individuals who have completed 16 years of school education in a foreign country or 16 years of school education of a foreign country by taking a correspondence course in Japan offered by a school of that foreign country; have conducted research for two years or longer at a university, research institution, etc.; and are recognized by this graduate school as possessing equivalent or greater academic capabilities as those of a person who has a master's degree based on its research findings, etc.

(7) Applicants who are recognized by the graduate school as possessing the equivalent or greater academic skill as that of a person who has a master's degree or professional degree based on an individualized admission qualification investigation and who will be 24 years of age as of September 30, 2026.

# **Information on the Long-Term Study Program**

## **1. Overview**

This program is available to students who would not be able to complete the program within the standard course term (three years) due to full-time employment or other circumstances (including responsibilities related to the care of elderly or disabled family members or the raising of children) and therefore want a longer period of time to conduct their studies systematically. Students must file an application and may be approved for a systematically planned course of study (hereinafter referred to as “long-term study”) after an individual review.

## **2. Eligibility**

Individuals who are applying for the long-term study program must meet one of the terms listed below, be unable to make a commitment to full-time studies as a consequence of the circumstances described, and would therefore like to extend in advance the number of years over which they will conduct their studies (research).

- (1) Individuals who are engaged in full-time employment, such as those currently employed by government agencies or companies (excluding those who will continue to receive salaries while being relieved of their work duties), and self-employed individuals
- (2) Individuals who are engaged in temporary or part-time employment that is deemed by this graduate school to adversely affect their studies
- (3) Individuals who have responsibilities, such as raising children or caring for other family members, that are deemed by this graduate school to adversely affect their studies to the same degree as the responsibilities listed in item (2) above
- (4) Individuals who have visual impairments, hearing impairments, physical disabilities, or other disabilities and are deemed by the graduate school to be adversely affected by their disabilities, causing their graduate school studies to suffer for a long term.

## **3. Enrollment Period**

The allowable length of period under the long-term study program is up to six years for the doctoral course. Study periods for long-term study applicants are approved in one-year increments.

The maximum length of enrollment (including the period for time off, etc.) for a student who has been approved for long-term study is up to six years in the doctoral course, the same maximum length of time as students under the standard term of study.

The period of time off that this graduate school will allow is the same for students under either the standard term of study or long-term study program, i.e., three years for doctoral students.

## **4. Application Procedures**

### **(1) Application Deadline**

In general, those wishing to apply for the long-term study program should apply at the time they submit their admission applications.

### **(2) Submission of Documents**

Submit the following documents to CSE office:

- (a) An Application for long-term study (form 1)
- (b) A Long-term study plan (form 2)

(c) Documents verifying your reasons for needing long-term study approval

### (3) Review and Notification of Results

Applications for the long-term study program will be reviewed by the graduate school, and applicants will be notified of the results of that review with the notification of examination results.

## **5. Contraction or Extension of the Long-Term Study Period**

If deemed necessary by the graduate school, approval may be granted for a contraction or extension of the long-term study period once, and only once, during the student's period of enrollment. However, the long-term study period can be minimized down to the standard period of study (3 years).

## **6. Tuition Fee**

The tuition of students who have been approved for the long-term study program shall be calculated in annual amounts by dividing the total tuition for the standard term of study (annual tuition  $\times$  3 years) by the number of years for which the long-term study has been approved. In cases where the tuition amount is revised or a change to the long-term study period is approved, tuition will be recalculated at that time. However, any tuition already paid will not be adjusted retroactively.

**✳Be sure not to pay the tuition for your current term of study until you are notified of whether your application for the long-term study program or a change thereof has been approved.**

## **7. Other**

To request an application form or clarify any issues, contact CSE office.

## Handling of Personal Information

- (1) All personal information collected by Hokkaido University will be completely protected in compliance with the Act on the Protection of Personal Information Held by Independent Administrative Agencies, etc., and other related acts and pursuant to the Hokkaido University Personal Information Management Regulations.
- (2) Names, addresses, and other personal information provided to the university through application procedures will be used solely for (a) enrollee selection, (b) the announcement of exam results, (c) admission procedures, (d) surveys and research on enrollee selection methods, and (e) related processes.
- (3) Some of these processes may be outsourced by the university to a contracted service provider (hereinafter referred to as “contractor”). All or some of the personal information provided by applicants may be provided to the contractor only as needed to perform the tasks for which it has been contracted.
- (4) Personal information obtained through application procedures will be used only for those who are admitted for (a) school administration purposes (student registration, academic counseling, etc.), (b) student support services (health management, scholarship applications, etc.), and (c) tuition and other administrative purposes.
- (5) Of the personal information described in item (4) above, names, addresses and etc. will be used to facilitate communication with students from the Hokkaido University Frontier Foundation and organizations related to Hokkaido University, such as (a) the Hokkaido University Athletic Union, and (b) the Hokkaido University School of Engineering and School of Science Alumni Association.

Graduate School of Chemical Sciences and Engineering, Hokkaido University

## List of Instructors and Their Fields of Research

Molecular Chemistry and Engineering Course					
No.	Laboratory	Staff		Research Contents	Faculty
<b>Microscopic Chemical Analyses Unit</b>					
01	Quantum Chemistry	Professor	TAKETSUGU Tetsuya	Development of "Predictive" Chemical Theory for Reaction, Electron, and Spectroscopy and programs, as well as advanced computational chemistry applications. First-principle excited-state reaction dynamics, theory-guiding catalytic design with element strategy, development of a large-scale electronic structure theory, near-field molecular theory, reaction informatics.	Faculty of Science
		Associate Professor	KOBAYASHI Masato		
		Assistant Professor	IWASA Takeshi		
02	Theoretical Chemistry	Professor	MAEDA Satoshi	Development of new theories and computational programs aimed at predicting reaction pathways in molecules and materials, and their applications. The main targets of the applications are organic reaction, photoreaction, enzyme reaction, catalysis, and crystal phase transition.	Faculty of Science
		Assistant Professor	SUNAGA Ayaki		
03	Physical Chemistry	Professor	MURAKOSHI Kei	Surface electrochemistry; ultra-sensitive detection and characterization of surfaces of target materials under electrochemical potential control for novel energy conversion systems and intelligent devices. Electrochemical synthesis of nano-materials with well-defined electronic/geometrical structures for novel catalysis.	Faculty of Science
		Lecturer	FUKUSHIMA Tomohiro		
		Assistant Professor	ITATANI Masaki		
04	Analytical Chemistry	Assistant Professor	ZHOU Ruifeng	Light-matter interaction. Ultrafast dynamics and photochemistry/optical physics of nanomaterials in microscopic regions using ultrashort pulse lasers. Chemical and biosensors using nanostructures.	Faculty of Science
		Professor	UENO Kosei		
		Associate Professor	RYUZAKI Sou		
Assistant Professor	IMAEDA Keisuke				
<b>Fine Chemical Reactions Unit</b>					
05	Organic Reaction	Professor	INOKUMA Yasuhide	Structural organic chemistry on synthesis and structural analysis of unique functional molecules such as polyketones. Use of machine learning in organic chemistry. Synthetic organic chemistry, electroorganic synthesis, organofluorine chemistry.	Faculty of Engineering
		Associate Professor	SENBOKU Hisanori		
06	Organoelement Chemistry	Professor	ITO Hajime	The research purpose of our laboratory is development of novel synthetic reactions, valuable catalytic process and new functional materials in the field of organoelement chemistry. We aim to challenge to establish a new chemistry frontier that includes organometallics, heteroatom chemistry and coordination chemistry.	Faculty of Engineering
		Professor	KUBOTA Koji		
		Assistant Professor	MANDAI Ryo		
07	Organic Synthesis	Professor	OHKUMA Takeshi	Molecular catalysis, catalytic asymmetric reactions, practical organic synthesis.	Faculty of Engineering
		Associate Professor	ARAI Noriyoshi		
		Assistant Professor	YURINO Taiga		
08	Organometallic Chemistry	Professor	New faculty member	Catalyst design using supramolecules, solid surfaces, and light for the development of transformative chemical reactions. Quantum chemical calculations for exploring chemical reaction mechanisms and catalyst design.	Faculty of Science
		Associate Professor	SHIMIZU Yohei		
		Assistant Professor	MASUDA Yusuke		
09	Organic Chemistry I	Professor	SUZUKI Takanori	Structural and physical organic chemistry based on precise molecular design. Fundamental studies on novel phenomena and the development of stimuli-responsive, highly strained molecules for potential applications.	Faculty of Science
		Associate Professor	ISHIGAKI Yusuke		
10	Chemical Reaction Development	Professor	Benjamin LIST	Design and discovery of chemical reactions using computational, informational, and experimental science. Development of novel reactions using organocatalysts. Development of materials and functional organic molecules. Prediction of chemical reactions based on chemical informatics. Development of automated reaction pathway search methods and electronic state dynamics simulation methods.	Institute for Chemical Reaction Design and Discovery
		Professor	IWATA Satoru		
		Professor	MITA Tsuyoshi		
		Associate Professor	Pavel SIDOROV		
		Associate Professor	JIN Mingoo		
		Associate Professor	GAO Min		
		Associate Professor	JIANG Julong		
		Associate Professor	AIWAZA Naoya		
Assistant Professor	TSUJI Nobuya				
Assistant Professor	AKAMA Tomoko				
<b>Catalytic Reactions Unit</b>					
11	Catalytic Transformation	Professor	MURAYAMA Toru	Renewable energy utilization and environmental protection applications based on the precise design of solid catalysts. Reactions at room temperature using gold nanoparticle catalysts, development of catalysts for energy-saving removal of pollutants from the atmospheric environment, and development of catalysts that promote the effective use of CO <sub>2</sub> .	Institute for Catalysis
		Associate Professor	ODA Akira		
		Assistant Professor	ISHIKAWA Hiroya		
12	Macromolecular Science	Professor	NAKANO Tamaki	Design and synthesis of chiral polymers and supramolecular systems having innovative functions such as pharmaceutical activities, light emission, electronic and ionic conduction, separation, and catalytic activities focusing on helical polymers, $\pi$ -stacked polymers, liquid crystals, and biopolymers.	Institute for Catalysis
		Associate Professor	SONG Zhiyi		
13	Catalyst Material	Professor	SHIMIZU Kenichi	Development of metal nanocluster catalyst for direct synthesis of chemicals. Development of supported metal catalysts for automobile emission control. Surface chemistry and surface spectroscopy for catalyst design.	Institute for Catalysis
		Associate Professor	TOYAO Takashi		
		Assistant Professor	ANZAI Akihiko		
14	Catalysis Theory	Professor	HASEGAWA Jun'ya	Theoretical and computational chemistry for catalysis. Analysis of potential energy surface and dynamics of catalytic reactions. Development of chemical concepts, theoretical and AI models, and first-principle molecular simulation method for catalytic reactions. Development and application of large-scale computational methods for catalytic reactions using electric power.	Institute for Catalysis
		Associate Professor	IIDA Kenji		
		Assistant Professor	MIYAZAKI Ray		
<b>Chemical Process Engineering Unit</b>					
15	Chemical System Engineering	Professor	KIKUCHI Ryuji	Energy carrier direct power generation fuel cells, Green hydrogen production catalysts and devices. Electrochemical synthesis of ammonia. Electrochemical conversion of methane and ethane to valuable chemicals. Valuable chemicals synthesis by CO <sub>2</sub> hydrogenation.	Faculty of Engineering
		Associate Professor	TADA Shohei		
16	Material Design and Engineering	Professor	MUKAI Shin	Material design and engineering, adsorption engineering, separation engineering, precise structural controlling of porous materials, development of new production systems of nanomaterials, development of devices for reaction, separation and energy storage using nanomaterials, material recycling.	Faculty of Engineering
		Associate Professor	NAKASAKA Yuta		
		Assistant Professor	IWASA Nobuhiro		
		Assistant Professor	NAGAIISHI Shintaro		
17	Catalytic Reaction Engineering	Associate Professor	OGINO Isao	Reaction engineering, design and tuning of structures and reactive microenvironments of catalysts and separation materials for sustainable chemical processes, microwave-assisted synthesis of solid catalysts and electrode materials.	Faculty of Engineering
18	Chemical Energy Conversion Systems	Associate Professor	TSUBOUCHI Naoto	Clean carbon technology for efficient reduction of CO <sub>2</sub> emissions: fundamental research about advanced and novel technologies for biomass, low rank coals, heavy oil residues and low-valued natural gas.	Faculty of Engineering

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Materials Chemistry and Engineering Course					
No.	Laboratory	Staff		Research Contents	Faculty
<b>Molecular Materials Chemistry Unit</b>					
19	Chemical Informatics	Professor	TAKAHASHI Keisuke	Materials discovery through materials informatics. The aim of the research is to develop fully automated materials and catalysts using a combination of high-throughput experiments and calculations, with the integration of artificial intelligence.	Faculty of Science
		Assistant Professor	Lauren TAKAHASHI		
20	Molecule & Life Nonlinear Science	Professor	KOMATSUZAKI Tamiki	Practical-oriented theoretical chemistry. The fundamental principles of chance and necessity of chemical reactions, and new concepts and methodologies to bridge theory and experiments for biological molecular systems.	Research Institute for Electronic Science
		Assistant Professor	NISHIMURA Goro		
		Assistant Professor	LI Jizhou		
21	Solid-State Chemistry	Associate Professor	HARADA Jun	Studies of structures, molecular motions, and phase transitions of molecular crystals: Development and functional control of molecular ferroelectric crystals. Exploring collective function of molecules derived from chemical reactions.	Faculty of Science
		Assistant Professor	KAGEYAMA Yoshiyuki		
<b>Inorganic Materials Chemistry Unit</b>					
22	Inorganic Chemistry	Professor	MATSUI Masaki	Solid-state ionic materials for next-generation battery applications. Low-temperature synthesis of complex metal oxides. Crystal growth mechanisms in less noble metal electrodeposition.	Faculty of Science
		Assistant Professor	NASU Akira		
23	Structural Inorganic Chemistry	Professor	MIURA Akira	Preparation of emerging functional ceramics, microstructure control of ceramics and their property evaluation, new nitrides and chlorides for optical, electromagnetic and chemical application.	Faculty of Engineering
		Associate Professor	MASUBUCHI Yuji		
24	Inorganic Synthesis Chemistry	Professor	TADANAGA Kiyoharu	Development of functional inorganic materials using liquid phase. Preparation of nano-structured thin films and materials for energy conversion and storage by solution processes.	Faculty of Engineering
		Assistant Professor	FUJII Yuta		
25	Solid State Chemistry	Professor	SHIMADA Toshihiro	Synthesis and new functions of nano-structured solids and thin films including inorganic nanomaterials, organic semiconductors, 2D materials and nanocarbons. Chemistry of semiconductor processing.	Faculty of Engineering
		Professor	SHIMOGAKI Yukihiko		
		Assistant Professor	YOKOKURA Seiya		
		Assistant Professor	WAIZUMI Hiroki		
26	Nano Ceramics	Visiting Professor	KUWATA Naoaki	Synthesis and control of functional properties of novel solid-state battery materials and ion dynamics analysis.	National Institute for Materials Science
		Visiting Associate Professor	KUBOTA Kei		
27	Applied Materials Chemistry	Visiting Professor	KIJIMA Norihito	Synthesis, crystal structure, and functional properties of inorganic materials for energy storage. Precise synthesis of inorganic porous materials and their potential applications as adsorbents and catalysts	National Institute of Advanced Industrial Science and Technology
		Visiting Professor	KIMURA Tatsuo		
<b>Frontier Materials Chemistry Unit</b>					
28	Interfacial Electrochemistry	Professor	HABAZAKI Hiroki	Electrochemical fabrication of nanostructure-controlled materials and thin films and their mechanistic understanding and functional applications, nano- and micro-electrochemical characterizations of advanced and practical materials, and electrochemical energy conversion and storage devices.	Faculty of Engineering
		Associate Professor	FUSHIMI Koji		
		Associate Professor	KITANO Sho		
		Assistant Professor	IWAI Mana		
29	Advanced Materials Chemistry	Professor	HASEGAWA Yasuchika	Development of strong-luminescent and photofunctional advanced materials based on photochemistry and coordination chemistry.	Faculty of Engineering
		Associate Professor	KITAGAWA Yuichi		
		Assistant Professor	WANG Mengfei		
30	Material Chemistry	Professor	SADA Kazuki	Creation of innovative functions, structures, and reactions by controlling intermolecular forces in mixtures. Discovery and understanding of novel physical phenomena and development of novel functional materials through collaboration between experimental chemistry, computational chemistry, and materials informatics.	Faculty of Science
		Assistant Professor	MATSUOKA Keitaro		
		Assistant Professor	TSUTSUMI Takuro		
31	Interactive Functional Materials	Professor	NAGASHIMA Kazuki	Designed nanomaterials synthesis and nanostructure control based on inorganic chemistry and nanomaterial chemistry, exploration of nanoscale functional properties, creation of novel nano/microdevices, and application to large-area thin film devices and data science. Application examples include the artificial olfactory sensors and the optoelectronic devices.	Research Institute for Electronic Science
		Associate Professor	YOMOGIDA Yohei		
		Assistant Professor	OKA Sayuki		
<b>Functional Materials Chemistry Unit</b>					
32	Interfacial Energy Conversion Materials Chemistry	Visiting Professor	NOGUCHI Hidenori	Fundamental study of chemical-electric energy conversion, including novel batteries, fuel cell catalysts. In situ determination of geometric, electronic, and molecular structures at solid/liquid interfaces and electron transfer dynamics by ultrafast laser spectroscopy.	National Institute for Materials Science
33	Superconducting Materials	Visiting Professor	YAMAURA Kazunari	Aiming to develop quantum functional materials, we synthesize novel inorganic compounds, perform atomic-level structural analysis, and evaluate their physical properties to explore new physical phenomena based on structure-property correlations. Our focus is primarily on transition metal oxides.	National Institute for Materials Science
		Visiting Associate Professor	TSUJIMOTO Yoshihiro		
34	Nanoscience	Visiting Professor	SHIRAHATA Naoto	Our focus is on researching and developing new optoelectronic and electronic-functional materials that will contribute to advancements in nanoscience and nanotechnology. Our research is rooted in physical and device science, with the aim of exploring new phenomena and applications. To achieve our goals, we utilize advanced material design and synthesis techniques, along with cutting-edge nanoscopic analysis.	National Institute for Materials Science
		Visiting Professor	KITAURA Ryo		
35	Nano-Assembled Materials Chemistry	Visiting Professor	YOSHIO Masafumi	Development of nanostructured functional materials that contribute to highly efficient energy conversion devices such as fuel cells, lithium ion batteries, and actuators, based on the understanding of interfacial physicochemical phenomena by in-situ observation techniques.	National Institute for Materials Science
		Visiting Professor	MASUDA Takuya		

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Biological Chemistry and Engineering Course					
No.	Laboratory	Staff		Research Contents	Faculty
<b>Biomolecular Chemistry Unit</b>					
36	Biological Chemistry	Professor	New faculty member		Faculty of Science
37	Biostructural Chemistry	Professor	ISHIMORI Koichiro	Functional and structural characterization and molecular design of proteins using spectroscopy.	Faculty of Science
		Associate Professor	UCHIDA Takeshi		
38	Molecular Biochemistry	Professor	ABE Kazuhiro	Structural and functional analysis to elucidate molecular mechanisms of membrane transport proteins including primary transporters, employing X-ray crystallography, cryo-EM SPA combined with various biochemical and biophysical analysis.	Faculty of Science
		Assistant Professor	Chai Chandru GOPALASINGAM		
39	Microsystem Chemistry	Professor	TOKESHI Manabu	Development of on-site analysis systems and functional nanoparticles using microfluidic devices and new measurement technologies.	Faculty of Engineering
		Professor	MAEKI Masatoshi		
		Assistant Professor	ISHIDA Akihiko		
<b>Biofunctional Chemistry Unit</b>					
40	Mechanistic Organic Chemistry	Professor	NAGAKI Aiichiro	Flash organic chemistry led by flow microreactor research, flash creation of functional molecules.	Faculty of Science
		Assistant Professor	MIYAGISHI Hiromichi		
		Assistant Professor	ZHONG Xianzhu		
41	Organic Chemistry II	Professor	TANINO Keiji	Total synthesis of natural products having a complex structure and novel bioactivities. Development of efficient methodologies and new reactions to construct polycyclic skeleton with various functional groups on the basis of carbocation chemistry, heteroatom chemistry, and organometallic chemistry.	Faculty of Science
		Associate Professor	SUZUKI Takahiro		
		Assistant Professor	TAKINO Junya		
42	Chemistry of Molecular Assemblies	Associate Professor	SATO Shinichiro	Synthesis and computational chemistry of functional molecular assemblies based on soft matter such as synthetic polymers and carbohydrate chains.	Faculty of Engineering
		Associate Professor	YAMAMOTO Takuya		
43	Polymer Chemistry	Professor	SATOH Toshifumi	Synthetic and structure-property relationship studies of architecturally complex polymers; synthetic study and application of conductive polymers; synthetic study and application of functional block copolymers; development of environmentally benign polymer synthesis process; creation of environmentally benign polymers.	Faculty of Engineering
		Professor	ISONO Takuya		
		Assistant Professor	LI Feng		
		Assistant Professor	SUZUKI Ryota		
44	Biosynthetic Chemistry	Professor	MATSUMOTO Ken' ichiro	Biosynthesis of useful and unnatural chemicals using engineered biosynthetic systems, and in vitro evolution of enzymes to achieve the goal. The targets are biodegradable plastics, biocompatible polymers, chiral compounds, enzymatic degradation, recycle, lipid production and antibacterial lipid.	Faculty of Engineering
		Associate Professor	KIKUKAWA Hiroshi		
45	Chemical Biotechnology	Visiting Professor	HIRAISHI Tomohiro	Elucidation of reaction mechanism of bio-based polymer-degrading enzymes, and development of highly functional and efficient enzymes for biotechnological applications. Materials science for designing advanced functional bio-based polymers.	RIKEN
		Visiting Professor	FUJITA Masahiro		
<b>Cell Engineering Unit</b>					
46	Applied Biochemistry	Professor	OGASAWARA Yasushi	Search for and characterization of novel primary/secondary metabolic pathways in microorganisms and their application for production of useful compounds by biosynthetic and metabolic engineering.	Faculty of Engineering
		Assistant Professor	SATOH Yasuharu		
47	Biomolecular Chemistry	Associate Professor	TAJIMA Kenji	Biopolymer Chemistry(Elucidation of cellulose synthetic mechanism in bacteria, Creation of eco-recycling polymer materials with high mechanical strength, and Mass production of nanocellulose by bacteria and its application), Cell processing engineering (process development with stem cells), Animal cell cultivation engineering for pharmaceuticals production, Bioanalytical chemistry (development of novel biochemical analysis systems using microdevices and molecular assemblies as reaction media).	Faculty of Engineering
		Associate Professor	TANI Hirofumi		
<b>Molecular Medical Biochemistry Unit</b>					
48	Signaling in Cancer and Immunology	Professor	TAKAOKA Akinori	Research on molecular mechanisms underlying cellular response to infection and cancer. (i) Pathogen recognition receptors (innate sensors) and their signaling pathways, (ii) Innate immune response against cancer)	Institute for Genetic Medicine
		Associate Professor	SATO Seiichi		
		Assistant Professor	SUZUKI Hiraku		
49	Developmental Physiology	Professor	MOTEGI Fumio	Cell and developmental mechanisms underlying cell polarity, soma-germ fate dichotomy, asymmetric cell division, and morphogenesis. Development of new optical techniques for in vivo molecular imaging.	Institute for Genetic Medicine
		Lecturer	KIMURA Kenji		
		Lecturer	NISHIMURA Yukako		

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Chemical Reaction Design and Discovery Course (Tentative name)					
No.	Laboratory	Staff		Research Contents	Faculty
<b>Chemical Reaction Design and Discovery Unit (Tentative name)</b>					
50	Asymmetric Catalysis	Professor	Benjamin LIST	Design and development of asymmetric reactions using confined catalysts. Integration of computational chemistry, machine learning, and automated synthesis systems for the analysis, design, and optimization of asymmetric reactions and catalysts.	Institute for Chemical Reaction Design and Discovery
		Associate Professor	TSUJI Nobuya		
51	Nano-assembly Material Chemistry	Associate Professor	JIN Mingoo	Design of novel molecular assembly structures and dynamics in solid and polymer states with development of new functional properties.	Institute for Chemical Reaction Design and Discovery
52	Molecular Materials Discovery	Associate Professor	AIWAZA Naoya	Discovery of molecular materials via computational, informational, and experimental sciences for organic semiconductor devices.	Institute for Chemical Reaction Design and Discovery
53	Computational Chemistry for Catalysis	Associate Professor	GAO Min	Mechanistic elucidation and molecular design of catalytic reactions based on computational chemistry. Elucidation of the origins of reactivity and selectivity from reaction path networks. Construction and realization of catalyst design principles based on large-scale reaction path networks constructed using machine-learning potentials.	Institute for Chemical Reaction Design and Discovery
54	Theoretical Reaction Design	Associate Professor	JIANG Julong	Development of novel homogeneous coupling reactions and asymmetric catalytic reactions using the automated reaction path search method (AFIR), as well as application of the extended AFIR (EX-AFIR) method to the application of external forces to molecules and mechanochemistry.	Institute for Chemical Reaction Design and Discovery
55	Mathematical Informatics	Professor	IWATA Satoru	Mathematical methods (optimization, numerical computation, and machine learning) for prediction, design, and control of chemical reactions. Topics include visualization of reaction path networks, reaction route prediction, atom mapping, optimal molecular modification, yield derivative method, and virtual molecular modeling.	Institute for Chemical Reaction Design and Discovery
56	Molecular Informatics and Data Science	Associate Professor	Pavel SIDOROV	Acquisition of fundamental techniques in data science and machine learning in chemistry, including molecular structure representation, feature extraction using descriptors, construction of predictive models using machine learning, and utilization of chemical reaction data, leading to a foundational understanding of data-driven approaches in computational chemistry.	Institute for Chemical Reaction Design and Discovery
<b>Chemical Reaction Co-Creation Design Unit (Tentative name)</b>					
57	Co-Creation in Organic Reaction Design	Professor	MITA Tsuyoshi	Development of novel organic transformations from small molecules such as CO <sub>2</sub> and ethylene, enabling efficient construction of valuable molecular scaffolds through the integration of computational, data-driven, and experimental approaches, along with promotion of practical reaction development and societal implementation through collaborative research with industry.	Institute for Chemical Reaction Design and Discovery
<b>Chemical Reaction Design and Discovery Collaborative Unit (Tentative name)</b>					
58	Quantum Chemistry	Professor	TAKETSUGU Tetsuya	Please refer to the "Research Content" section of its dual-appointed course	Molecular Chemistry and Engineering Course (Faculty of Science)
		Associate Professor	KOBAYASHI Masato		
59	Theoretical Chemistry	Professor	MAEDA Satoshi	Please refer to the "Research Content" section of its dual-appointed course	Molecular Chemistry and Engineering Course (Faculty of Science)
60	Organic Reaction	Professor	INOKUMA Yasuhide	Please refer to the "Research Content" section of its dual-appointed course	Molecular Chemistry and Engineering Course (Faculty of Engineering)
61	Organoelement Chemistry	Professor	ITO Hajime	Please refer to the "Research Content" section of its dual-appointed course	Molecular Chemistry and Engineering Course (Faculty of Engineering)
		Professor	KUBOTA Koji		
62	Organometallic Chemistry	Associate Professor	SHIMIZU Yohei	Please refer to the "Research Content" section of its dual-appointed course	Molecular Chemistry and Engineering Course (Faculty of Science)
63	Catalysis Theory	Professor	HASEGAWA Jun-ya	Please refer to the "Research Content" section of its dual-appointed course	Molecular Chemistry and Engineering Course (Institute for Catalysis)
64	Material Design and Engineering	Professor	MUKAI Shin	Please refer to the "Research Content" section of its dual-appointed course	Molecular Chemistry and Engineering Course (Faculty of Engineering)
65	Chemical Informatics	Professor	TAKAHASHI Keisuke	Please refer to the "Research Content" section of its dual-appointed course	Materials Chemistry and Engineering Course (Faculty of Science)
66	Molecule & Life Nonlinear Science	Professor	KOMATSUZAKI Tamiki	Please refer to the "Research Content" section of its dual-appointed course	Materials Chemistry and Engineering Course (Research Institute for Electronic Science)
67	Solid State Chemistry	Professor	SHIMADA Toshihiro	Please refer to the "Research Content" section of its dual-appointed course	Materials Chemistry and Engineering Course (Faculty of Engineering)
68	Advanced Materials Chemistry	Professor	HASEGAWA Yasuchika	Please refer to the "Research Content" section of its dual-appointed course	Materials Chemistry and Engineering Course (Faculty of Engineering)
69	Polymer Chemistry	Professor	SATOH Toshifumi	Please refer to the "Research Content" section of its dual-appointed course	Biological Chemistry and Engineering Course (Faculty of Engineering)

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