

**Academic Year 2017**  
**Graduate School of Science**  
**Hokkaido University**

# **Master's Course**

**(First Part of Doctoral Program)**

**Second Selection**

## **Guidelines for Application for the Entrance Examination**

**(Admission for International Students Residing in Japan)**

**December 2016**

### Note

Applicants for general category must submit either TOEFL (iBT or PBT) or TOEIC Public Testing original score sheets.

The test must have been taken after July 2014. The copy of score sheet is disapproved.

However, applicants who wish to apply for the Department of Mathematics are allowed to submit TOEFL-ITP score and the test score that applicants took exam between April and June 2014. Based on the application period, check the test schedule of TOEFL and TOEIC respectively.

Those who took an examination on the first selection (held on August 18, 19 and 20, 2016) or the fall special selection (held on November 9 and 10, 2016) and already submitted the score sheets are exempted from submitting them. If you apply to those, check the appropriate box in the application document. (If you wish, you may submit new scoresheets.)

## **Hokkaido University's Acquisition and Use of Personal Information**

- (1) In handling personal information from applicants, Hokkaido University makes every effort to protect this information through appropriate management based on the "Privacy Policy of Hokkaido University" and relevant laws and ordinances such as the "Protection Law for Private Information Held by Independent Administrative Corporations."
- (2) Personal information, such as name, address, etc., provided by applicants to the university in the process of applying for admission will be used only for 1) assessment of applicants, 2) the announcement of results, 3) enrollment procedures, 4) surveys and research on enrollee selection methods, and 5) business operations pertaining to 1-4.
- (3) Companies commissioned as part of the relevant operations by the university (hereafter called "commissioned companies") may handle personal data. Part or all of the personal information submitted to the university by applicants will be provided to the commissioned companies, to the extent necessary for them to carry out their commissioned operations.
- (4) After successful applicants are enrolled, personal information they provided on their application forms will be used for 1) educational affairs (such as registration, educational guidance, etc.), 2) student support services (such as health administration, fellowship applications, etc.), and 3) business operations related to their tuition fees and other expenses.
- (5) Regarding the personal information in (4), only the name and address can be used for contact from 1) Hokkaido University Frontier Foundation, 2) Hokkaido University Athletic Union, and 3) the Alumni Association of the School of Science, Hokkaido University.

December 2016  
Graduate School of Science,  
Hokkaido University

## Admission Requirements for the Graduate School of Science

Applicants must have completed core subjects in the fields of Mathematics, Physics, Chemistry, Biological Sciences, Earth Science, etc., and related specialized subjects. They must also have the ability, character and aptitude to study independently and to rigorously investigate the principles of nature.

### General Category

#### >>1. Admission Quota

Department	Admission Quota	Website's URL
	April, 2017	
Mathematics	A few students	<a href="http://www.math.sci.hokudai.ac.jp/en/">http://www.math.sci.hokudai.ac.jp/en/</a>
Condensed Matter Physics	A few students	<a href="http://phys.sci.hokudai.ac.jp/quantum/index-e.html">http://phys.sci.hokudai.ac.jp/quantum/index-e.html</a>
Cosmosciences	A few students	<a href="http://www.ep.sci.hokudai.ac.jp/~cosmo/index-e.htm">http://www.ep.sci.hokudai.ac.jp/~cosmo/index-e.htm</a>
Natural History Sciences	A few students	Earth and Planetary Dynamics / Earth and Planetary System Science / Seismology and Volcanology <a href="http://www.sci.hokudai.ac.jp/grp/epsdc/exam/">http://www.sci.hokudai.ac.jp/grp/epsdc/exam/</a> Biodiversity <a href="http://www.sci.hokudai.ac.jp/biodiversity/English.html">http://www.sci.hokudai.ac.jp/biodiversity/English.html</a> Science Communication <a href="http://sc.sci.hokudai.ac.jp/">http://sc.sci.hokudai.ac.jp/</a>

#### Notes

- ①. For details about a department, please inquire to the department concerned.
- ②. Applicants who wish to apply for the Department of Natural History Sciences should choose 1) Earth and Planetary Dynamics / Earth and Planetary System Science / Seismology and Volcanology, 2) Biodiversity, or 3) Science Communication, and check the appropriate box on the Application Form.

#### >>2. Eligible Applicants

Applicants must fulfill one of the following criteria:

- (1) Graduated or are expected to graduate from a college, prior to admission to the Graduate School.
- (2) Received or are expected to receive a Bachelor degree in conformity with Article 104, Clause 4, of the School Education Law (1947, Law No. 26), prior to admission to the Graduate School.
- (3) Completed or are expected to complete a 16-year overseas school education course, prior to admission to the Graduate School.
- (4) Completed or are expected to complete a 16-year course of education in Japan through a distant learning course offered by an overseas educational institution, prior to admission to the Graduate School.
- (5) Completed or are expected to complete education at an institution in Japan that is recognized as equivalent to a university by a foreign country (limited to individuals who are recognized by a foreign educational system as having completed 16 years of education) and that is designated by the Minister of Education, Culture, Sports, Science, and Technology, prior to admission to the Graduate School.
- (6) Prior to admission to the Graduate School, received a degree equivalent to a Bachelor degree from overseas universities or other foreign schools that require more than three years of course work. Institutions should be rated by certified persons from the foreign government or institutions concerned, or satisfy the conditions set by the Ministry of Education, Culture, Sports, Science and Technology about general conditions of the educational research activities. This includes distant-learning degree program completed in Japan offered by an overseas educational institution that shall be recognized as equivalent to a university by a foreign country and designated by preceding item.
- (7) Completed a specialized course at a vocational school (limited to courses with a duration of four years or more and that satisfy the conditions set by the Ministry of Education, Culture, Sports, Science and Technology) designated by the Ministry after the date set by the Ministry, prior to admission to the Graduate School.

- (8) Designated by the Ministry of Education, Culture, Sports, Science and Technology (February 7, 1953 Ministry of Education Notification No. 5).
- (9) Have spent three or more years studying at a college or completed a 15-year overseas school education course, and be recognized by the Graduate School as having completed the prescribed number of credits with an excellent academic record.
- (10) Be recognized by the Graduate School as having reached an academic level equivalent to or higher than that of university graduates, as verified by individual admission qualification screening, and be at least age 22 before admission to the Graduate School.

**>>3. Pre-assessment of Applicants' Qualifications**

**Application Period for Pre-assessment: December 1 – December 6, 2016**

The Pre-assessment of Applicants' Qualifications is held prior to the application period for the entrance examination. **Applicants under (9) or (10) in "2. Eligible Applicants"** must apply for this by submitting "5. Application Documents" during the above period.

**Applicants who apply for the Pre-assessment of Applicants' Qualifications should not pay the entrance examination fee when they apply for the pre-assessment.** They should pay the entrance examination fee after referring to the notes below. The Graduate School Educational Affairs Section is open from 9:00 AM – 4:00 PM, except on Saturdays, Sundays, and national holidays; if you mail the documents, they must be received by the deadline.

Notes:

The pre-assessment application results will be sent by mail to applicants around December 13, 2016; once their qualifications have been accepted by the pre-assessment, applicants must pay the examination fee, referring to "7. Entrance Examination Fee," and submit the payment certificate (E) by January 11, 2017. If the Educational Affairs Section does not receive the payment certificate (E) during the application period, the application will not be accepted and regarded as canceled.

Japanese Government (MEXT) scholarship students, students in the State-Sponsored Scholarship Program of the China Scholarship Council, and students having a Hokkaido University President's Fellowship (including those who are expected to receive these scholarships) are not required to pay the examination fee.

**>>4. Application Period**

**January 5 – January 11, 2017**

**Applicants under (1) – (8) in "2. Eligible Applicants"**

Submit the completed application documents (see "5. Application Documents") with the payment certificate (E) (see "7. Entrance Examination Fee") during the application period. Applications will be accepted 9:00 AM – 4:00 PM, except on Saturdays, Sundays, and national holidays. If you mail the application documents, they must be received by the deadline.

**>>5. Application Documents**

- Applicants under (9) or (10) in "2. Eligible Applicants" must submit the following documents during the application period for "3. Pre-assessment of Applicants' Qualifications."
- In the following chart, "○" indicates documents that must be submitted; "△" indicates documents that must be submitted for those who fall into the following "Remarks".

Documents	Applicants			Remarks
	(1) (2) (3) (4) (5) (6) (7) (8)	(9)	(10)	
1 Application Form, Resume, Admission Ticket and Photo Card.	○	○	○	Prescribed. Applicants who have completed a correspondence course offered by an overseas educational institution or an overseas school education course are required to attach <b>Resume B</b> .
2 Official Transcript issued by the last academic institution previously attended.	○	○	○	Applicants under (9) in "2. Eligible applicants" should submit a transcript issued by their current academic institution.

Documents		Applicants			Remarks
		(1) (2) (3) (4) (5) (6) (7) (8)	(9)	(10)	
3	Official Certificate of Graduation, or Expected Graduation, issued by the last academic institution previously attended; Certificate of Degree Conferral, or Certificate of Expected Degree Conferral.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Applicants under (2) in “2. Eligible Applicants” should submit an Official Certificate of Degree (expected) issued by the National Institution for Academic Degrees and University Evaluation (NIAD-UE).
4	Documents certifying that the applicant has academic skills equal to or greater than those of a college graduate.			<input type="radio"/>	Discretionary format. e.g., documents detailing international activities, work experience, or language learning experience; research papers; patent publications; certificates of qualification; recommendation letters from supervisors at schools previously attended.
5	Documents to be submitted according to the department applied for.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Refer to “Documents to be Submitted to Particular Departments.”
6	Self-addressed envelope to receive the admission ticket for the entrance examination.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Prescribed. Write your name and mailing address on an envelope with a 362-yen stamp attached. If you change your address after applying, please notify the Graduate School Educational Affairs Section, Science and Life Science Administration Department, Hokkaido University.
7	Stickers for notification of the application results and for communication purposes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Prescribed. Write your name and mailing address on each sticker. If you change your address after applying, please notify the Graduate School Educational Affairs Section, Science and Life Science Administration Department, Hokkaido University.
8	Recommendation letter(s) issued by a university previously attended or a dean at a university previously attended. (sealed up)	<input type="checkbox"/>	<input type="radio"/>	<input type="checkbox"/>	Discretionary format, A-4 size pages. ①. Applicants under (9) in “2. Eligible Applicants” should submit these documents. ②. Applicants under (1) – (8) or (10) in “2. Eligible Applicants” and who are applying to the Department of Mathematics, Condensed Matter Physics, or CosmoSciences may submit these documents (optional).
9	Evidence of English proficiency. (the original score sheets of TOEFL, TOEIC*.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Acceptable score sheets are as follows: Other than the followings, any scores are not acceptable. 【 Department of Condensed Matter Physics, Department of CosmoSciences, Department of Natural History Sciences】 (1) TOEIC Public Testing (The test must have been taken after July 2014) (2) TOEFL-iBT or TOEFL-PBT (The test must have been taken after July 2014) The copy of score sheets are disapproved. TOEFL-ITP, TOEIC-IP and TOEIC-Bridge are not accepted.  【Department of Mathematics】 (1) TOEIC Public Testing (The test must have been taken after April 2014) (2) TOEFL-iBT, TOEFL-PBT or TOEFL-ITP (The test must have been taken after April 2014) The copy of score sheets are disapproved. TOEIC-IP and TOEIC-Bridge are not accepted.
10	Self-addressed envelope for notification of the pre-assessment results.		<input type="radio"/>	<input type="radio"/>	Write your name and mailing address on a standard envelope with an 82-yen stamp attached.

\* Students who cannot submit the score sheets of TOEFL etc. during application period must notify the Graduate School Educational Affairs Section, Science and Life Science Administration Department.

\* Those who took an examination on the first selection (held on August 18, 19 and 20, 2016) or the fall special selection (held on November 9 and 10, 2016) and already submitted the score sheets are exempted from submitting them. If you apply to those, check the appropriate box in the application document. (If you wish, you may submit new score sheets.)

## ◎Documents to be Submitted to Particular Departments

Department	Documents to be submitted	Remarks	
Mathematics	<ol style="list-style-type: none"> <li>Reasons for applying (prescribed).</li> <li>Mathematics report and summary (the summary is a prescribed form).</li> </ol>	<ol style="list-style-type: none"> <li>Provide the reasons for applying to this department.</li> <li>Summarize the research fields you have an interest, especially “proposition” or “theory” in more than 7 pages less than 10 pages A4-sized paper. On oral examinations, applicants will be questioned about this report by interviewer. Also, write the outline of mathematics report in the prescribed form.</li> </ol>	
Condensed Matter Physics	<ol style="list-style-type: none"> <li>List of preferred laboratories or fields (prescribed).</li> </ol>	Write your first, second, and third choices of laboratories selected from the List of Supervisors and Research Fields.	
Cosmosciences	<ol style="list-style-type: none"> <li>List of preferred laboratories or fields (prescribed).</li> <li>Cosmosciences report. (discretionary format)</li> </ol>	<ol style="list-style-type: none"> <li>Write your first, second, and third choices of laboratories selected from the List of Supervisors and Research Fields.</li> <li>Report in two pages or less (A-4 or letter-size pages) on your graduation research or cosmoscience-related themes you are interested in.</li> </ol>	
Natural History Sciences	Earth and Planetary Dynamics Earth and Planetary System Science Seismology and Volcanology	<ol style="list-style-type: none"> <li>List of preferred laboratories or fields (prescribed).</li> <li>List of examination subjects (prescribed).</li> <li>Statement of reasons (prescribed).</li> </ol>	<ol style="list-style-type: none"> <li>Write your first and second choices of groups, laboratories, or centers selected from the List of Supervisors and Research Fields. If you do not have a second choice, please leave the section blank.</li> <li>Choose two specialized subjects among five (mathematics, physics, chemistry, earth science, and earth science II) and circle them. No change is permitted after the documents are accepted.</li> <li>Applicants under (9) in “2. Eligible Applicants” must submit this statement of reasons. Report in three A4 size pages or less. e.g., documents detailing international activities, work experience, or language learning experience; research papers; patent publication; certificates of qualification; recommendation letters from supervisors at schools previously attended.</li> </ol>
	Biodiversity	<ol style="list-style-type: none"> <li>List of preferred supervisors (prescribed).</li> </ol>	Write the names of the supervisors you select.
	Science Communication	<ol style="list-style-type: none"> <li>List of preferred laboratories or fields (prescribed).</li> <li>Reasons for applying (prescribed).</li> </ol>	

### >>6. Submission of Application Documents

Submit to: Graduate School Educational Affairs Section  
 Science and Life Science Administration Department  
 Hokkaido University  
 Kita-10 Nishi-8, Kita-ku, Sapporo 060-0810, Japan

\* If you send your application documents by mail, please indicate “**Application for Graduate School Enclosed**” in red on the envelope and send it by **registered mail**.

### >>7. Entrance Examination Fee 30,000 yen

①. Japanese Government\* (MEXT) scholarship students, students in the State-Sponsored Scholarship Program of the China Scholarship Council, or students having a Hokkaido University President’s Fellowship (including those who are expected to receive these scholarships) are not required to pay the examination fee.

\* MEXT scholarship students recommended by universities other than Hokkaido University are required to submit a copy of a letter verifying that they have received this scholarship.

- ②. Remit the examination fee to the bank account or post office account designated by this University, using the attached examination fee transfer form specifically prepared for this purpose, and attach the payment certificate (E) to the appropriate section on the application form.
- ③. The examination fee is not refundable except the following cases:
- The applicant has not submitted an application, or the application was rejected after the application fee was remitted.
  - The applicant paid the examination fee twice by mistake.

### >>8. Selection Method

The Graduate School will assess applicants on the basis of their entrance examination (oral exams), official transcript, etc.

Also, starting with the entrance examination for fiscal year 2017, applicants will be selected by considering in the evaluation of the score of TOEFL or TOEIC in all departments.

Based on the application period, check the schedule for TOEFL (iBT, PBT or ITP) and TOEIC Public Testing respectively.

However, acceptable score sheets of TOEFL or TOEIC are different depending on each department, so check it in advance.

### >>9. Examinations (Written and Oral Exams) in Academic Subjects

<Sapporo Site>: February 8 and 9, 2017

		February 8		February 9	
		AM	PM	AM	PM
Mathematics		Oral examination (9:00~)	Oral examination (13:00~)		
Condensed Matter Physics		Oral examination (9:00~)	Oral examination (13:00~)		
Cosmosciences		Oral examination (9:00~)	Oral examination (13:00~)		
Natural History Sciences	Earth and Planetary Dynamics Earth and Planetary System Science Seismology and Volcanology		Specialized subjects (13:00~16:00)	Oral examination (9:00~)	
	Biodiversity		Specialized subjects (13:00~16:00)		Oral examination (13:00~)
	Science Communication	Essays (11:10~12:40)	Oral examination (14:00~)		

Notes:

- ①. English examination will not be conducted. Applicants will be selected based on either submitted (1) or (2) score sheet.

Those who took an examination on the first selection (held on August 18, 19 and 20, 2016) or the fall special selection (held on November 9 and 10, 2016) and already submitted the score sheets are exempted from submitting them. If you apply to those, check the appropriate box in the application document. (If you wish, you may submit new scoresheets.)

\* Acceptable score sheets

**【Department of Condensed Matter Physics, Department of Cosmosciences, Department of Natural History Sciences】**

(1) TOEIC Public Testing (The test must have been taken after July 2014)

(2) TOEFL-iBT or TOEFL-PBT (The test must have been taken after July 2014)

The copy of score sheet is disapproved. TOEFL-ITP, TOEIC-IP and TOEIC-Bridge are not accepted.

**【Department of Mathematics】**

(1) TOEIC Public Testing (The test must have been taken after April 2014)

(2) TOEFL-iBT, TOEFL-PBT or TOEFL-ITP (The test must have been taken after April 2014)

The copy of score sheets are disapproved. TOEIC-IP and TOEIC-Bridge are not accepted.



- ②. Applicants for the Departments of Condensed Matter Physics and CosmoSciences are required to take oral examinations in specialized subjects.
- ③. For the Divisions of Earth and Planetary Dynamics, Earth and Planetary System Science, and Seismology and Volcanology in the Department of Natural History Sciences, applicants are required to answer questions from two of five specialized subject areas: mathematics, physics (including optional questions on earth and planetary physics), chemistry (including optional questions on earth and planetary chemistry), earth science I (earth history, tectonics, and sedimentology), and earth science II (lithology, mineralogy, and volcanology).
- ④. For the Division of Biodiversity in the Department of Natural History Sciences, a list of keywords indicating the areas covered by the subject examination will be sent to applicants along with the admission ticket for the entrance examination. The list of keywords can also be obtained from the following website:  
<http://www.sci.hokudai.ac.jp/biodiversity/> (This list is written in Japanese.)
- ⑤. For their essay examination for the Division of Science Communication in the Department of Natural History Sciences, applicants must choose two of the eight designated topics listed on the following website:  
<http://sc.sci.hokudai.ac.jp/examination/thesis> (This list is written in Japanese.)

#### >>10. Announcement of Application Results

Successful applicants will be announced on the bulletin board on the ground floor of the Graduate School of Science (large lobby inside north entrance to Building 2), Hokkaido University, **around 4:30 PM on February 16, 2017**. All applicants will also receive the results by mail.

Also, the examinee's number will be posted on the Web site of the Graduate School of Science, Hokkaido University.

#### >>11. Procedures for Enrollment and Payment of Fees

All successful applicants will be notified about how to proceed with enrollment registration along with their letter of acceptance.

Enrollment Fee: 282,000 yen (estimated).

Tuition Fee: 267,900 yen

[For the first semester. Total annual fee = 535,800 yen] (estimated).

\* The above tuition and fees are subject to revision at the time of or during your enrollment. In the event of a revision, the revised amounts are immediately applied.

#### >>12. Precautions

- (1) Make sure to bring your admission ticket and put it on the desk when you take the examination.
- (2) Changes by applicants in the department to which they apply are not accepted for any reason.
- (3) If you have a physical disability that requires special considerations in order for you to take the entrance examination or attend classes, contact the Graduate School Educational Affairs Section at the time of application.

#### >>13. Long-term Graduate System

If you wish to take advantage of the Long-term Graduate System established by the Graduate School of Science, please apply after referring to "Information on the Long-term Graduate System".

#### >>14. Other Information

The admission ticket for the entrance examination will be sent to all applicants around January 19, 2017.

#### ◎If you have any questions regarding application procedures, please contact:

Graduate School Educational Affairs Section  
 Science and Life Science Administration Department  
 Hokkaido University  
 Kita-10 Nishi-8 Kita-ku, Sapporo 060-0810, Japan  
 Tel: (011) 706-3677

#### Graduate School of Science, Hokkaido University

URL: <http://www.sci.hokudai.ac.jp/english/index.html>

# Information on the Long-term Graduate System

## 1. Aims of the Long-term Graduate System

Under the Long-term Graduate System, a student can request an individual review by the graduate school and be accepted to complete a course in a planned manner within a period longer than the regular course term (2 years), for certain reasons such as responsibilities of work, or child and family care.

## 2. Intended Students

Applicants fulfilling one of the criteria below, who want to set a period of study in advance longer than the regular course term to complete an academic (research) course.

- (1) Have a full-time job in a public office or company (excluding people who are exempt from job duty but receive a salary), or are self-employed.
- (2) Have a part-time job that makes it stressful to engage in full-time academic work.
- (3) Are taking care of children or other family members, which makes it stressful to engage in full-time academic work.

## 3. Attendance Period

The attendance period for the Long-term Graduate System is up to 4 years, and a student can apply for the system by the year. Once the application is accepted, the student can attend school for up to the accepted period, with the possibility of an additional 2 years. Students can also take a temporary leave of absence from school for up to 2 years.

## 4. Procedures for Applying for Long-term Graduate Status

### (1) Application Period

Please submit complete application documents for the Long-term Graduate System and for the entrance examination together.

### (2) Required Documents

- ① Application Form for Long-term Graduate System (Form 1).
- ② Research Plan Under Long-term Graduate System (Form 2).
- ③ Documents that prove that the applicant needs to complete an academic course under the Long-term Graduate System (the format is discretionary).

### (3) Announcement of Application Results

The Graduate School individually assesses each application for Long-term Graduate Status, and will notify only applicants who successfully pass the entrance exam of the results.

## 5. Annual Tuition Fee

The annual tuition fee is determined by the calculation below for every year of the term.

$$\begin{array}{l} \text{Annual tuition fee as} \\ \text{a Long-term Graduate} \\ \text{Student} \end{array} = \begin{array}{l} \text{Annual tuition fee for} \\ \text{his/her attending year} \end{array} \times \frac{\text{Regular course term (2 years)}}{\text{Period of his/her accepted} \\ \text{Long-term Course (years)}}$$

## 6. Other Information

For the details regarding the Long-term Graduate System, please contact the Graduate School Educational Affairs Section, Science and Life Science Administration Department, Hokkaido University.

# List of Supervisors and Research Fields

As of April 1, 2017

**Department of Mathematics, Graduate School of Science**

**Master's Course**

Fields	Supervisors		Keywords	Remarks
Algebra	Professor	Masanori Asakura	Arithmetic geometry	
	Professor	Mutsumi Saito	Algebraic analysis, rings of differential operators	
	Professor	Keiji Matsumoto	Special functions	
	Professor	Hiroshi Yamashita	Representation theory	
	Specially Appointed Professor	Hiroaki Terao	Singularity theory, combinatorics	Will retire in March, 2017
	Associate Professor	Noriyuki Abe	Representation theory	
	Associate Professor	Youichi Shibukawa	Yang-Baxter equations and quantum groups	
	Associate Professor	Simona Settepanella	Singularity theory, combinatorics	
	Associate Professor	Kenichiro Tanabe	Vertex algebras, algebraic combinatorics	
	Associate Professor	Daisuke Matsushita	Algebraic geometry	
	Associate Professor	Masahiko Yoshinaga	Algebraic geometry, combinatorics	
	Assistant Professor	Kazuma Morita	Arithmetic geometry	
Geometry	Professor	Goo Ishikawa	Real algebraic geometry, singularity theory	
	Professor	Katsunori Iwasaki	Complex geometry, dynamical systems, Painleve systems	
	Professor	Toru Ohmoto	Singularity theory, topology	
	Specially Appointed Professor	Shyuichi Izumiya	Geometry, singularity theory	Will retire in March, 2018
	Associate Professor	Toshiyuki Akita	algebraic topology, group cohomology, discrete groups	
	Associate Professor	Shimpei Kobayashi	Differential geometry	
	Associate Professor	Masao Jinzenji	Mathematical physics	
	Associate Professor	Hitoshi Furuhata	Differential geometry	
	Assistant Professor	Yutaka Kanda	Differential topology	
	Assistant Professor	Michele Torielli	Algebraic geometry, Combinatorics	
Analysis	Professor	Hiroaki Aikawa	Potential theory, real analysis	
	Professor	Asao Arai	Mathematical physics, functional analysis	
	Professor	Hideo Takaoka	Differential equations	Will retire in March, 2017
	Professor	Akihito Hora	Functional analysis, probability theory	
	Professor	Naofumi Honda	Algebraic analysis	
	Professor	Jun Masamune	Global Analysis	
	Associate Professor	Masaharu Kobayashi	Harmonic Analysis	
	Associate Professor	Reiji Tomatsu	Operator algebras	
	Associate Professor	Takahiro Hasebe	Probability theory, complex analysis, functional analysis	
	Associate Professor	Nao Hamamuki	Nonlinear partial differential equations, Theory of viscosity solutions	
	Associate Professor	Tadahiro Miyao	Mathematical physics, functional analysis, condensed matter physics	
Applied Mathematics	Professor	Shin-ichiro Ei	Nonlinear analysis, nonlinear partial differential equations	
	Professor	Hideo Kubo	Partial Differential Equations associated with Nonlinear Dynamics	
	Professor	Shuichi Jimbo	Applied analysis, Partial differential equations, Spectral theory	
	Professor	Ichiro Tsuda	Complex systems, chaotic dynamical systems, brain theory	Will retire in March, 2017
	Professor	Masaharu Nagayama	Reaction-diffusion systems, mathematical modeling, numerical simulation	
	Professor	Michiko Yuri	Ergodic theory, dynamical systems, complex systems	
	Associate Professor	Zin Arai	Dynamical systems, computational topology	
	Associate Professor	Akira Sakai	Probability theory, statistical mechanics, mathematical physics	
	Associate Professor	Yuzuru Sato	Complex systems, chaotic dynamical systems	
	Associate Professor	Takao Namiki	Ergodic theory, dynamical systems, complex systems	
	Associate Professor	Kenji Matsumoto	Biophysical complex systems, chaotic dynamical systems	
	Assistant Professor	Masakazu Akiyama	Mathematical modeling, mathematical and theoretical biology, numerical calculation	
	Assistant Professor	Elliott Ginder	Variational methods, free boundary problems, numerical analysis	
	Assistant Professor	Jusup, Marko	Mathematical Biology, Ecological Modelling, Biophysics	

Department of Condensed Matter Physics, Graduate School of Science

Master's

Laboratories	Professors		Keywords	Remarks
Electronic Properties of Solids	Professor	Migaku Oda	high-temperature cuprate superconductors, frustrated spin systems, surface & nano-structure magnetism, material research, scanning tunneling microscopy/spectroscopy (STM/STS), spin-polarized STM	
	Associate Professor	Hideo Matsuyama		
	Assistant Professor	Tohru Kurosawa		
	Assistant Professor	Hiroyuki Yoshida		
Electronic Properties of Low-dimensional Conductors	Specially Appointed Professor	Kazushige Nomura	Low-dimensional organic conductors, scanning tunneling microscopy (STM), scanning tunneling spectroscopy (STS), nonlinear conductivity, symmetry of Cooper pairs, spin density waves (SDWs), chiral superconductivity, mesoscopic systems	Will retire in March, 2017
	Associate Professor	Noriaki Matsunaga		
	Assistant Professor	Hiroyoshi Nobukane		
J-Material: Physics of Strongly Correlated Systems	Professor	Hiroshi Amitsuka	J-material, superconductivity, magnetism, heavy fermion, quantum phase transition, magnetoelectric effects, very low temperatures, high magnetic fields, high pressure, ultrasonic measurements, $\mu$ SR, neutron scattering, RXS, ferroelectrics, multiferroics, electronic ferroelectricity, phase transition, photoinduced cooperative phenomena	
	Associate Professor	Masaki Takesada		
	Associate Professor	Tatsuya Yanagisawa		
	Assistant Professor	Hiroyuki Hidaka		
Low Temperature Physics	Professor	Atsushi Kawamoto	NMR, strongly correlated electron systems, superconductivity, magnetism	
	Lecturer	Yoshihiko Ihara		
	Assistant Professor	Syuei Fukuoka		
Condensed Matter Dynamics	Associated Professor	Ryusuke Nozaki	microscopic dynamics of condensed matters, dielectric and optical spectroscopy from 1microHz to 10 PHz, Raman scattering, femtosecond pump-probe spectroscopy, terahertz time-domain spectroscopy, solids, complex liquids, hydrogen-bonding systems, semiconductors, nonlinear optical phenomena, biological materials	
	Associated Professor	Tomobumi Mishina		
	Assistant Professor	Sekika Yamamoto		
Statistical Physics	Professor	Koji Nemoto	Statistical physics, non-equilibrium, non-linearity, random systems, complex networks, phase transition, self-organization, critical phenomena, scale-free structures, numerical simulation, Superconductivity, superfluidity, Bose-Einstein condensation, Condensed matter physics, magnetism, multiferroics, heavy fermion	
	Associate Professor	Takafumi Kita		
	Assistant Professor	Koji Okuda		
	Assistant Professor	Satoru Hayami		
mathematical physics	Professor	Shoji Yamamoto	Transition-metal complexes, organic polymers, single-molecule nanomagnets, photoinduced phase transition, optically switchable magnetism, nuclear magnetic relaxation	
	Lecturer	Jun Ohara		

Laboratories	Professors		Keywords	Remarks
Nanostructure Physics (RIES)	Professor	Akira Ishibashi	Nano-structured devices, new photovoltaic devices, next-generation solar cells, clean unit system platforms	
	Associate Professor	Kenji Kondo	Quantum field theory, many-body perturbation theory, spintronics devices, magnetism, electronic correlations, Dirac electron, topological insulator	
Phase Transition (RIES)	Specially Appointed Associate Professor	Yuhji Tsujimi	Time domain light scattering, ferroelectrics, quantum ferroelectrics, glass transition, frequency domain light scattering, complex liquids, relaxor ferroelectrics	Will retire in March 2017

Laboratories	Supervisors		Keywords	Remarks
Observational Astronomy	Associate Professor	Kazuo Sorai	Observational astronomy, extragalactic astronomy, interstellar matter, development of observational instruments and system for the Antarctic THz telescope	
Particle Theory Group	Professor	Hisao Suzuki	Particle physics, beyond the standard model, dark matter, dark energy, grand unified theory, superstrings, supersymmetry, early universe	
	Professor	Tatsuo Kobayashi		
	Associate Professor	Ryuichi Nakayama		
	Specially Appointed Associate Professor	Osamu Seto		
	Lecturer	Kazuhiko Suehiro		
	Assistant Professor	Eun-Kyung Park		
Theoretical Nuclear Physics	Associate Professor	Masaaki Kimura	Quantum many-body problems, nuclear force, unstable nuclei, nucleosynthesis, hadronic matter	
	Lecturer	Wataru Horiuchi		
	Assistant Professor	Bo Zhou		
Theoretical Astrophysics	Specially Appointed Professor	Asao Habe	Theoretical astronomy, numerical simulations, galaxy formation, galaxy clusters, supermassive black holes, interstellar matter, star formation, interstellar dust	
	Specially Appointed Professor	Takashi Kozasa		
	Assistant Professor	Takashi Okamoto		
	Assistant Professor	Alexander Pettitt		
Planetary and Space Group	Professor	Kiyoshi Kuramoto	Origin and evolution of planets and satellites, material evolution during planetary system formation, structure and dynamics of Earth and planetary atmospheres, comparative planetology, space exploration and ground-based observation, experimental studies, theory and hierarchical numerical simulation models, applications of information technology	
	Professor	Yukihiro Takahashi		
	Associate Professor	Masaki Ishiwatari		
	Specially Appointed Associate Professor	Junichi Kurihara		
	Specially Appointed Associate Professor	Akihiko Hashimoto		
	Lecturer	Mitsuteru Sato		
	Assistant Professor	Masatsugu Odaka		
	Specially Appointed Assistant Professor	Shunichi Kamata		
	Specially Appointed Assistant Professor	Tetsuro Ishida		

Laboratories	Supervisors		Keywords	Remarks
Astrophysical Chemistry / Ice and Planetary Science	Professor	Akira Kouchi	Interstellar molecules, ice dust, amorphous solid water, surface reactions	
	Professor	Naoki Watanabe		
	Associate Professor	Yuki Kimura		
	Assistant Professor	Hiroshi Hidaka		
	Assistant Professor	Tetsuya Hama		
	Assistant Professor	Yasuhiro Oba		
Phase Transition Dynamics	Professor	Gen Sazaki	Phase transition dynamics, crystal growth, ice, snow, interferometry, advanced optical microscopy, atomic force microscopy	
	Assistant Professor	Ken Nagashima		
	Assistant Professor	Ken-ichiro Murata		
Information Media Science	Professor	Izumi Fuse	Learning science, learning platforms, open education	
	Assistant Professor	Yuichi Yamamoto		
Nuclear Reaction Data Science	Associate Professor	Yoshiharu Hirabayashi	Nuclear data, nuclear reactions, evaluation	Inter-field Cooperation with the Japan Atomic Energy Agency (JAEA) in the field of nuclear data.
	Specially Appointed Assistant Professor	Shuichiro Ebata		
	Visiting Professor	Keiichi Shibata		
	Visiting Professor	Hideo Harada		
	Visiting Professor	Tokio Fukahori		
Spacecraft Observation Group	Visiting Professor	Takehiko Sato	Planetary exploration, infrared astronomy from space, radio astronomy from space	Inter-field Cooperation with the Japan Aerospace Exploration Agency (JAXA) in the field of spacecraft observation.
	Visiting Associate Professor	Yasuhiro Murata		
	Visiting Associate Professor	Issei Yamamura		

Research Fields	Research Groups & Laboratories	Supervisors		Keywords	Remarks
Earth and Planetary Dynamics	Physical Oceanography and Climate	Professor	Shoshiro Minobe	Physical oceanography, meteorology, air-sea interactions, climate variability & change, oceans' role in climate, multidisciplinary challenges, numerical modelling, data analysis	
		Associate Professor	Masaru Inatsu		
		Lecturer	Yoshinori Sasaki		
	Physical Hydrology	Specially Appointed Associate Professor	Kazuhisa Chikita	Drainage basins, water and material cycles, sedimentation, lake hydrodynamics	Will retire in March 2017.
	Space Geodesy	Professor	Kosuke Heki	Space geodesy, GNSS, GPS, INSAR, GRACE, gravity, Earth rotation, atmospheric sensing, crustal deformation, glaciology, planetary geodesy, ionosphere	
		Professor	Masato Furuya		
		Associate Professor	Youichiro Takada		
	Seismology	Professor	Kiyoshi Yomogida	Seismic wave propagation, Earth structure, seismic tomography, broadband waveform analysis, lateral heterogeneity and anisotropy	
		Associate Professor	Kazunori Yoshizawa		
	Earth and Planetary System Science	Petrology and Volcanology	Professor	Mitsuhiro Nakagawa	Evolution and eruption processes of magma plumbing systems of volcanos; magma generation and eruption processes of caldera volcanos; spatial and temporal variation in arc volcanism; long-term forecasting of volcanic activity and mitigation of volcanic disasters
Associate Professor			Takeshi Kuritani		
Assistant Professor			Shumpei Yoshimura		
Geochemistry		Professor	Hisayoshi Yurimoto	Geochemistry, cosmochemistry, planetary chemistry, galaxies, stars, planetary systems, protoplanetary disks, planets, meteorites, Earth, core, mantle, crust, oceans, atmosphere, life, magma, geofluids, mass spectrometry, spectroscopy, microscopy, dust formation, crystal growth, high pressure, solar system evolution, planetary exploration	Hokkaido University Museum
		Associate Professor	Shogo Tachibana		
		Associate Professor	Junji Yamamoto		
		Assistant Professor	Ken-ichi Bajo		



Research Fields	Research Groups & Laboratories	Supervisors		Keywords	Remarks
Earth and Planetary System Science	Earth Materials Science	Professor	Takaya Nagai	Mineralogy, crystallography, crystal growth, physics and chemistry of minerals	
		Assistant Professor	Jun Kawano		
		Assistant Professor	Ayako Shinozaki		
	Earth Environmental History · Paleontology	Associate Professor	Yoshitsugu Kobayashi	Vertebrate evolution, dinosaurs, reptiles, birds, phylogenetic relationships, functional morphology, comparative anatomy, embryology	Hokkaido University Museum
		Assistant Professor	Yasuhiro Iba	Evolution of Mesozoic marine biota, paleobiogeographic responses, global environmental change, origin of modern marine biota	
	Earth System Evolution	Professor	Noriyuki Suzuki	Fate of organic matter in sediments and sedimentary rocks, Earth hydrocarbon resources, long-term carbon cycle, evolution of Earth systems	
		Associate Professor	Ken Sawada	Molecular paleobiology, paleoenvironmental reconstruction, biogeochemistry of geomacromolecules, biomarker paleothermometry, algal biofuels	
		Lecturer	Tsuyoshi Watanabe	High-resolution reconstruction of palaeoenvironments, biogeochemical cycles in reef ecosystems on the geological time scale	
	Geotectonics	Professor	Toru Takeshita	Structural geology, tectonics, rheology, microstructures, metamorphic geology	
		Specially Appointed Associate Professor	Makoto Kawamura	Tectonostratigraphy, soft-sediment deformation, clastic composition, forearc geology, accretion tectonics	Will retire in March 2018.
		Associate Professor	Jun Kameda	Subduction zone seismogenesis, water-rock interactions, diagenesis, electron microscopy, clay mineralogy	
		Assistant Professor	Marie Python	Petrography and chemistry of the crust and mantle in ophiolites and the Pacific Ocean, mantle melting, magmatic evolution of the oceanic crust, hydrothermal circulation, interactions within the oceanic crust and mantle	

Research Fields	Research Groups & Laboratories	Supervisors		Keywords	Remarks
Biodiversity	Biodiversity	Professor	Takeo Horiguchi	Biodiversity II: Microalgae, protists, dinoflagellates, phylogeny, endosymbiosis	
		Professor	Ryuichi Masuda	Bidiversity IV (Laboratory of Genetic Diversity): Molecular phylogenetics, population genetics, biogeography, mammals, birds	
		Professor	Masaoki Takagi	Biodiversity III: Ecology, evolution, island, bird	
		Professor	Kazuhiro Kogame	Biodiversity II: Taxonomy, phylogeny, evolution, seaweeds	
		Associate Professor	Hiroshi Kajihara	Biodiversity I: Marine invertebrates, Nemertea, taxonomy, phylogeny, morphology	
		Associate Professor	Helena Fortunato	Biodiversity I: Mollusks, coralline algae, Bryozoa, calcification patterns, population genetics, ecology, ocean acidification, biogeography	
		Associate Professor	Toru Katoh	Biodiversity I: Evolution, phylogeny, populations, insects	
		Lecturer	Masaki Eda	Laboratory of Archaeozoology & Zooarchaeology: archaeological remains, birds, bones, bone collagen, DNA	
		Lecturer	Tsuyoshi Abe	Biodiversity II: Seaweeds, taxonomy, phylogeny, chemotaxonomy	
		Lecturer	Keiichi Kakui	Biodiversity I: Marine invertebrates, Crustacea, Tanaidacea, taxonomy, phylogeny, morphology	

Research Fields	Research Groups & Laboratories	Supervisors		Keywords	Remarks
Biodiversity	Biodiversity	Assistant Professor	Yoshinori Nishita	Bidiversity IV (Laboratory of Genetic Diversity):Molecular genetics, molecular biology, evolution, immunology, mammals	
		Assistant Professor	Kevin Wakeman	Biodiversity II : Biodiversity, evolution, protists, Apicomplexa, dinoflagellates	

Research Fields	Research Groups & Laboratories	Supervisors		Keywords	Remarks
Science Communication	Communication of Science and Technology	Associate Professor	Naoyuki Mikami	Sociology, science and technology, public participation, governance and policy, technology assessment	Institute for the Advancement of Higher Education
		Associate Professor	Shishin Kawamoto		CoSTEP
	Philosophy of Science and Technology	Professor	Masahiro Matsuou	Philosophy of science, ethics of science and technology, philosophy of risk, statistical inference of cause	
	Museum Education and Media Studies	Professor	Makiko Yuasa	Museum communication, museum education, museum evaluation, media studies, museum video production	The Hokkaido University Museum
		Associate Professor	Yoshiharu Fujita		Institute for the Advancement of Higher Education
	Science Education	Professor	Makoto Suzuki	Self-efficacy, cognitive bias, creativity, human-computer interactions, higher education, educational technology, open education	Institute for the Advancement of Higher Education
		Professor	Toshiyuki Hosokawa		
		Associate Professor	Fumihito Ikeda		
		Associate Professor	Kunimasa Yamada		
		Associate Professor	Katsusuke Shigeta		Information Initiative Center, Hokkaido University
Seismology and Volcanology	Seismological Observation	Professor	Yuichiro Tanioka	Earthquake source processes, generation and propagation of tsunamis, pre-historical earthquakes and tsunamis, seismic tomography, active fault, earthquake prediction, early warning system, tectonics in northeastern Asia	
		Associate Professor	Kei Katsumata		
		Associate Professor	Hiroaki Takahashi		
		Lecturer	Mako Oozono		
	Ocean Bottom Seismology	Associate Professor	Yoshio Murai	Subsurface structure at subduction zones, elastic wave propagation, tectonics of Northern Mid Atlantic Ridge, subduction earthquake, paleo-seismological analysis, international field science, disaster mitigation	
		Assistant Professor	Yuichi Nishimura	subduction earthquake, paleo-seismological analysis, international field science, disaster mitigation	
	Volcano Physics	Professor	Makoto Murakami	Volcanology, volcanic seismology, eruption prediction, transport processes, volcano hydrology, crustal deformation, space geodesy, geo-electromagnetism, spectroscopy of volcanic plume, volcano monitoring system	
		Associate Professor	Hiromitsu Ooshima		
		Assistant Professor	Hiroshi Aoyam		
	Subsurface Structure	Professor	Takeshi Hashimoto	Subsurface exploration	