GUIDELINES FOR APPLICANTS (April 2024)
to *The Double-Degree Doctoral Program*
at the Graduate School of Natural Science and Technology
Kanazawa University
JAPAN

Based on the agreement with the below universities, a Special Selection for the Double-Degree Doctoral Program will be performed.

I. Departmental Division

Applicants will be accepted into the Division of Mathematical and Physical Sciences (*).

(*) As for the staff in charge of the Double Degree Program, see Appendix.

Home university	Qualified Doctoral programs at the home university	Number of students accepted
Institut Teknologi Bandung, Republic of Indonesia	Doctoral Program at the Faculty of Mathematics and Natural Science	5
Czech Technical University in Prague, Czech Republic	Doctoral Program in Mathematical Engineering or Physical Engineering at the Faculty of Nuclear Sciences and Physical Engineering	5

Table 1

II. Qualification

Applicants applying to the Double-Degree Doctoral Program of Kanazawa University must satisfy the following requirements:
 (1) Will have obtained a Master's degree from an accredited university by March 31, **2024**.
AND
 (2) Will have enrolled in a qualified doctoral program at the applicant's home university by April 1, **2024,**
    or obtain the necessary permission from Kanazawa University.

III. Application Procedure

1. Documents

(1) **Application form with Photograph** (*)

Documents must be <u>written in English</u>. Use the format supplied. A passport style color photograph (3x4 cm, recently taken, full face, and printed with the applicant's name on the back) should be pasted on the specified place of the application form.

(2) **Certificate of Graduation of Master's Course** (*)

A certificate verifying the authenticity of the Master's degree written in English/Japanese, or an official letter written in English/Japanese stating the expectation of graduation.

(3) **Official Transcripts** (*)

Academic transcripts written in English/Japanese from the Master's course.

(4) **Master's Thesis**

 (i) For those who have already obtained a Master's degree, attach a copy of the Master's thesis, written in English/Japanese, or an abstract of the corresponding research (A4 within 5 pages, free format) written in English/Japanese.

(ii) For those who are expected to complete their Master's degree by the appointed time, attach a report of the research progress written in English/Japanese (include the title of the Master's thesis and an abstract of the research progress, A4 within 3 pages, free format).

(iii) Reprint(s) of published paper(s) or reference(s) written in English/Japanese can be attached.

(5) **Abstract of Oral Presentation**

Include an abstract for oral presentation, written in English/Japanese (A4 within 1-page, free format). This is not needed for those who are expected to graduate from the Master's course of the Division of Mathematical and Physical Sciences, Kanazawa University.

(6) **Agreement of Supervisor** (*)

Agreement of the prospected supervisor (A4 within 1-page, free format). This is not needed for those who are expected to graduate from the Master's course of the Division of Mathematical and Physical Sciences, Kanazawa University

(7) **Certificate of Enrollment** (*)

An official letter written in English from the home university stating that the applicant will have enrolled in a qualified Doctoral Program by April 1, **2024,** and indicating the expected graduation date.
OR
The equivalent document specified by Kanazawa University.

(8) **Pledge**

Applicants who are enrolled in the Double-Degree Master's program between Kanazawa University and the applicant's home university and who will only complete the Master's course of Kanazawa University by March 31, **2024** are required to submit a pledge (A4 within 1 page, free format) stating that they will decline the enrollment of the Double-Degree Doctoral program in the case that they find it impossible to complete the Master's course of the home university by the specified deadline.

(*) Photocopies of the original documents will not be accepted.

2. Application Period and Location

Application Period:	**August 28 – September 1, 2023**
Submission address:	ddp-apply@ml.kanazawa-u.ac.jp

Submit the scanned documents by email during the application period.

After Kanazawa University verifies the completeness of the application documents, you will be asked to send the original documents by mail (EMS) to the contact address below. **For the documents with (*) photocopies of the original documents will not be accepted.**

Local offices at each home institution

Home university	Local office
Institut Teknologi Bandung, Republic of Indonesia	Liaison office of Kanazawa University at Institut Teknologi Bandung
Czech Technical University in Prague, Czech Republic	Prof. Michal Beneš (Collaborative Professor of Kanazawa University) Department of Mathematics, Faculty of Nuclear Sciences and Physical Engineering Czech Technical University in Prague Trojanova 13, 120 00 Prague 2, Czech Republic E-mail: Michal.Benes@fjfi.cvut.cz

3. Examination

Selection will be based on the results of an oral examination, as well as on the academic transcripts. (Those who are expected to graduate from the Master's course of the Division of Mathematical and Physical Sciences, Kanazawa University are selected by means of a special examination.)

Date: **September 19 – October 20, 2023**
                (The oral examination will be conducted on the day
                 designated by Kanazawa University from the above schedule.)
    Location: **Location will be announced by email**

The oral examination includes an oral presentation (approximately 20 minutes) and an interview concerning the contents of the Master's thesis.
The oral examination will be performed in English and may be performed using a telecommunication system.
Before the oral examination (or before the application period, if possible), the applicant should contact the prospective academic supervisor(s) through e-mail, Skype, etc.

4. Announcement of Results
    The results will be announced by email on the following date:
            Date: December 1, 2023

IV. Notes
   (1) Studentship is based upon the agreement between the applicant's home university and Kanazawa University.
   (2) Applications will not be accepted if any of the documents are incomplete, incorrect, or not supported by evidence, or if they are not received by the specified deadline. Once submitted, documents cannot be modified and will not be returned.
   (3) If any information of the documents is later found to be false, admission can be canceled at any time after enrollment.
   (4) Personal information submitted here will only be used for the admission process and the Double-Degree Doctoral Program.
   (5) Applicants are expected to learn and understand the geography, climate, customs and traditions of Japan, as well as the rules of Kanazawa University. Also, although the thesis work can be carried out in English, it is recommended to get accustomed to the Japanese language for the essentials of daily life.
(6) Accepted applicants are expected to submit the following as soon as possible after the announcement of results to the contact address below:
            - Certificate of Health (use the format supplied)
            - A photocopy of a passport (only the page with applicant's name). Birth certificate or certificate of citizenship are also acceptable instead of a photocopy of a passport.

V. Contact
   For further information, please contact the office below via e-mail, or airmail:

        Admission Affairs Section
        Science and Engineering Administration Department
        Kanazawa University
        Kakuma-machi, Kanazawa 920-1192, Japan
E-mail: s-nyusi@adm.kanazawa-u.ac.jp (please include "[DDP]" in the subject header)

Appendix

Staff in charge of the Double Degree Program and their Research Fields

Chairman: Professor Hirofumi NOTSU (e-mail: notsu@se.kanazawa-u.ac.jp)

Computational Mathematics

Professor Manabu OURA

My research field is algebraic combinatorics. Keywords should be association scheme, coding theory, invariant theory, modular form.

Professor Katsuyoshi OHARA

We study and develop computer algebra systems related to special functions. Our research contains theory of Groebner bases for non-commutative rings, hypergeometric functions with multivariables, systems of holonomic differential equations and symbolic computations. We also use numerical computations for ordinary differential equations.

Associate Professor Kenichi KAWAGOE

Topology of knots, links and surfaces, representations of the braid groups and the quantum groups, and numerical calculations of quantum invariants.

Professor Masato KIMURA

Our research fields are numerical simulation and mathematical analysis of partial differential equations related to mathematical modeling of several phenomena, such as moving boundary problems, pattern dynamics, elasticity and fracture mechanics, particle simulation of fluid.

Associate Professor Atsuhira NAGANO

My research area is special functions and its applications to number theory. Especially, I am working on period mappings, K3 surfaces, Abelian varieties, hypergeometric functions and automorphic functions.

Professor Hirofumi NOTSU

My research interests are in the area of numerical analysis of partial differential equations arising especially in fluid dynamics. I am working on development and analysis of finite element schemes and their application to practical problems, which are important in scientific computing.

Associate Professor Norbert POZAR

I specialize in the analysis of nonlinear partial differential equations (PDEs) modelling phase transitions, crystal growth, population dynamics, fluid interfaces, etc., and the development of numerical methods for such PDEs. I am also interested in applying PDE and machine learning methods to image processing.

Associate Professor Koya SAKAKIBARA

My main research interest is the mathematical and numerical analysis of moving boundary problems describing dynamic interfacial phenomena. Recently, I am also interested in the numerical analysis of optimal transport.

Computational Experimentation

Professor Tatsuki ODA

Computational research in solid state physics (bulk properties, surface properties, and nanostructure properties), development of first-principles molecular dynamics, and basic researches for spintronics applications and magnetic shape memory alloys in computational science (Rashba effect, electric-field controlled magnetic anisotropy, magnetization process, magnetostriction, etc.).

Professor Fumiyuki ISHII

New materials are designed by using parallel supercomputers. We study electronic structures of semiconductors, 2D nanomaterials, energy materials, topological materials and magnetic materials. We also study interstellar molecules and clusters.

Professor Masahide SATO

By carrying out computational simulations and stability analysis, we study morphology of crystals, instabilities of steps on crystals, step bunching and step wandering.

Professor Hidemi NAGAO

We study structure and dynamics of the biological system (protein, lipid bilayer) by using molecular dynamics simulations. We also develop a coarse-grained model of soft matter (polymer, membrane) for multi-scale simulation.

Professor Shinichi MIURA

Microscopic properties of condensed matter systems ranging from superfluids to hydrated proteins are studied with extensive use of statistical mechanics, quantum mechanics and advanced molecular simulation techniques.

Mathematics Course

Chairman: Professor Satoshi WAKATSUKI (e-mail: wakatsuk@staff.kanazawa-u.ac.jp)

Staff of Mathematics

Professor WAKATSUKI, Satoshi

My research area is number theory. I study automorphic forms, automorphic representations, trace formulas, and Shintani zeta functions.

Lecturer HAYAKAWA, Takayuki

My research area is algebraic geometry. Especially, I am interested in birational geometry of algebraic 3-folds, (bi)rational maps and singularities of 3-folds.

Associate Professor KAWAKAMI, Yu

My research interests lie in the areas of Geometric analysis, in particular, global property of immersed surfaces in space forms, for example, minimal surfaces and surfaces with constant mean curvature.

Professor HASEGAWA, Kazuyuki

My research area is differential geometry. In particular, I am interested in quaternionic geometry, twistor theory and submanifold geometry.

Professor NAGOYA, Hajime

My research area is special functions and integrable systems. Especially, I study the Painleve equations, isomonodromy deformations, and their quantization by using or developing representation theory of infinite dimensional algebras.

Professor MIYACHI, Hideki

My research fields are in Complex analysis, Complex geometry and their applications (in particular, related topics with Low dimensional topology). Especially, I am working in the theory of conformal mappings and quasiconformal mappings, Hyperbolic geometry, and Teichmüller theory (Deformation theory of Riemann surfaces) and the pluripotential theory.

Professor OHTSUKA, Hiroshi

My research fields are variational problems, functional analysis, and partial differential equations relating to mathematical physics.

Associate Professor SUGIYAMA, Shingo

My research area is number theory and related topics. I mainly study automorphic forms and L-functions.

Physics Course

Chairman: Mayumi AOKI (e-mail: mayumi.aoki@staff.kanazawa-u.ac.jp)

Staff of Physics

See https://www.nst.kanazawa-u.ac.jp/labp/WebE_MP.html for possible research fields and supervisors.

CHECKLIST
for Double-Degree Doctoral Program Application Documents
KANAZAWA UNIVERSITY

Application Period: August **28 – September 1, 2023**

Name in English:

Please mark ✔ in the following boxes of the items you enclosed. <u>All documents must be written in English/Japanese.</u> <u>Photocopies will not be accepted (except Master's Thesis).</u>

☐ **Application Form (*)** ☐ **with photograph pasted on the specified place (#)**

☐ **Certificate of Graduation** ☐ **in English/Japanese**

☐ **Official Transcripts** ☐ **in English/Japanese**

☐ **Master's Thesis**

☐ **Abstract of Oral Presentation** (☐ I will graduate from the Division of Mathematical and Physical Sciences, Kanazawa University)

☐ **Agreement of Supervisor** (☐ I will graduate from the Division of Mathematical and Physical Sciences, Kanazawa University)

☐ **Certificate of Enrollment** ☐ **in English**

☐ **Pledge** (☐ I am currently not enrolled in KU Master's DDP)

For items marked with the (*) symbol, use the designated forms. For forms and certificates without the (*) symbol, prepare them by yourself.
 (#) A passport style color photograph (3x4 cm, recently taken, full face, and printed with your name on the back) should be pasted on the specified place of the application form.

MISSING DOCUMENTS: Are there any missing documents?   ☐ Yes   ☐ No

If yes, please list the item(s) and your reason for not including the missing document(s).

Missing document(s) and explanation:

Expected date of sending the above documents to Kanazawa University: (yy/mm/dd)

４月期入学

APPLICATION FOR ADMISSION (April 2024)
TO THE GRADUATE SCHOOL
OF NATURAL SCIENCE AND TECHNOLOGY
(Doctoral degree)
KANAZAWA UNIVERSITY

Photograph: 3x4cm recently taken, full face, and printed with your name on the back.

2024 年度 4 月期

金沢大学大学院自然科学研究科

（博士後期課程）入学願書

受験番号 (Do not fill in.)	

Application Category (受験区分):

Special Selection (Double-Degree Doctoral Program) (特別選抜(博士二重学位制度))

Division to which you are applying (志望専攻): **Division of Mathematical and Physical Sciences** (数物科学専攻)

Intended Field of study at Kanazawa University (金沢大学での希望研究分野):

_____

Name of Prospective Academic Supervisor at Kanazawa University (金沢大学での指導教員名):

_____

Prospective Study Period in Double-Degree Doctoral Program (DDP 在学期間):

From (yy/mm)：_____   To (yy/mm)：_____

Prospective Period of Stay at Kanazawa University (金沢大学での滞在期間):

From (yy/mm)：_____   To (yy/mm)：_____

Home Institution (所属大学院)：_____

Expected Graduation Date at Your Home Institution (所属大学院の修了予定日):

(yy/mm/dd)_____

Name in English (氏名): (Indicate your full legal name as it appears in your passport.)

☐Male　（男）

☐Female（女）

_____

Name in Katakana (if possible) (カタカナ):_____

Date of Birth (生年月日)：(yy/mm/dd)_____

Present Address (現住所):

_____

_____

Phone: _____ E-mail: _____

Country of Present Citizenship (国籍): _____

Educational Background (学歴): (List all schools attended in chronological order.)

Name of institution (学校名、小学校から) (Elementary, Secondary, and Post-Secondary)	Location (所在国) (Country)	Period (期間) (yy/mm — yy/mm)	Years Attended (年数)
(1) _____	_____	_____	_____ years
(2) _____	_____	_____	_____ years
(3) _____	_____	_____	_____ years
(4) _____	_____	_____	_____ years
(5) _____	_____	_____	_____ years
(6) _____	_____	_____	_____ years
(7) _____	_____	_____	_____ years

Total years of education _____ years

Highest diploma/degree awarded (学位): _____

Japanese Language Study(*) (日本語学習歴): ☐ None

Period of Study (yy/mm/dd)	Name of Institution	Textbook Names
___/___/___ ~ ___/___/___	_____	_____
___/___/___ ~ ___/___/___	_____	_____
___/___/___ ~ ___/___/___	_____	_____
___/___/___ ~ ___/___/___	_____	_____

Japanese Proficiency (*) (日本語能力): (Please give your own assessment of your Japanese proficiency.)

Speaking: ☐ Excellent ☐ Good ☐ Fair ☐ Poor ☐ None

Listening: ☐ Excellent ☐ Good ☐ Fair ☐ Poor ☐ None

Reading: ☐ Excellent ☐ Good ☐ Fair ☐ Poor ☐ None

Writing: ☐ Excellent ☐ Good ☐ Fair ☐ Poor ☐ None

English Proficiency (*) (英語能力): (for non-native English speaking applicants only.)

Speaking: ☐ Excellent ☐ Good ☐ Fair ☐ Poor ☐ None

Listening: ☐ Excellent ☐ Good ☐ Fair ☐ Poor ☐ None

Reading: ☐ Excellent ☐ Good ☐ Fair ☐ Poor ☐ None

Writing: ☐ Excellent ☐ Good ☐ Fair ☐ Poor ☐ None

(*) Contents entered into this item will not impact selection. (記入された事柄は、選抜には影響しません。)

Work Experience (職歴): ☐ None

Name of Company (会社名)	Location (所在地) (Country)	Period of Employment (期間) (yy/mm/dd)
(1) _____	_____	__ / __ / __ ~ __ / __ / __
(2) _____	_____	__ / __ / __ ~ __ / __ / __
(3) _____	_____	__ / __ / __ ~ __ / __ / __

Emergency Contact Information (family address) (緊急時連絡先):

(氏名)	(続柄)	(職業)	(所在国)
Name	Relationship	Occupation	Country of Residence

Address (住所): ☐ same as Present Address (現住所と同じ)

_____

_____

Phone: _____ E-mail: _____

I certify that all the information provided on this form and in the accompanying documents is complete and accurate to the best of my knowledge, and, if admitted, I agree to comply with the rules and regulations of Kanazawa University.

(願書及び添付書類に間違いはありません。合格後は金沢大学の規則等を遵守します。)

Date (yy/mm/dd): _____ Signature: _____

※ _____

<div align="center">

2024 Kanazawa University Graduate School

Certificate of Health

</div>

Graduate Course: <u>Natural Science and Technology</u>

Major: <u>Division of Mathematical and Physical Sciences</u>

Name (first, middle, last) _____

Sex (male・female)

Date of Birth (yy/mm/dd): _____ / _____ / _____

Height: _____ cm   Weight: _____ kg

Eye sight: right _____   left _____

Hearing ability: right (normal・abnormal)   left (normal・abnormal)

Chest X-ray: Date (yy/mm/dd): _____ / _____ /

Findings: _____

Comment: _____

Past history and Present illness:

_____

Total comments and suggestions by physician(s)

I (We) certify that these findings are accurate based on examinations.

Date (yy/mm/dd): _____ / _____ / _____

Hospital or Institution:

_____

Physician (print): _____

_____

(*signature*)