GUIDELINES FOR APPLICANTS (October 2021)
to *The Double-Degree Master's Program In Computational Science*
at the Graduate School of Natural Science and Technology
Kanazawa University
JAPAN

Based on the agreement with Universitas Gadjah Mada, Republic of Indonesia, a Special Selection for the Double-Degree Master's Program will be performed.

I. Departmental Division

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

(*) See Appendix.

II. Enrollment

In general, 10 students will be accepted.

III. Qualification

Applicants applying to the Double-Degree Master's Program of Kanazawa University must satisfy the following requirements:

(1) Have completed 16 years of qualified education, or will have done so by September 30, 2021.

AND

(2) Will have enrolled in one of the Master's Programs at the Faculty of Mathematics and Natural Sciences, Universitas Gadjah Mada by October 1, 2021.

IV. Application Procedure

1. Documents

(1) **Application form and Photograph** (*)

Documents must be written in English. 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) **Official Undergraduate Transcripts** (*)

An official English translation of academic transcripts.

(3) **Certificate of Graduation** (*)

An official English translation of the graduation certificate or an official letter written in English stating the expectation of graduation. The latter is not needed, if the transcripts include the statement of graduation.

(4) **Certificate of Enrollment** (*)

An official letter written in English from Universitas Gadjah Mada stating that the applicant will have enrolled in one of the Master's Programs at the Faculty of Mathematics and Natural Sciences by October 1, 2021 and indicating the expected graduation date.

(5) **Certificate of Health** (*)

Use the format supplied. Contents will not impact selection.

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

2. Application Period and Location

Application Period: **July 30 – August 5, 2021**
Location: **Office of International Affairs, Faculty of Mathematics and Natural Sciences at Universitas Gadjah Mada**

3. Examination

Selection will be based on the results of an oral examination (#), the matching between the applicant and his/her prospective supervisor(s) (##), and the academic transcripts.

Date: **09:00 (UTC+7) – August 26, 2021**
Location: **Room 221, Graduate Building of Faculty of Matemathics and Natural Sciences at Universitas Gadjah Mada**

(#) The oral examination may be performed using a telecommunication system. The oral examination will be performed in English.
(##) 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

Date: **September 6, 2021**
Location: **Office of International Affairs, Faculty of Mathematics and Natural Sciences at Universitas Gadjah Mada**

V. Notes

(1) Studentship is based upon the agreement between Universitas Gadjah Mada 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 Master's 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.

VI. 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 and Fields of Computational Science Course in the Division of Mathematical and Physical Sciences

Chairman: Professor Masato KIMURA (e-mail: mkimura@se.kanazawa-u.ac.jp)

Staff of 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.

Professor Seiro OMATA

Our research concerns theoretical examination of partial differential equations describing superconductivity, motion of droplets, collision of objects, fracture mechanics, tsunami, crystal growth and other physical phenomena. We develop and teach techniques for modeling and simulation of various phenomena related to nature, biology and society. We also provide guidance and research on mathematical finance.

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.

Assistant Professor Patrick van MEURS

I study the modelling, numerics and analysis of particle systems such as atoms, molecules, cells, sand, schools of fish, flocks of birds and crowds of people. The goal of my research is to discover the group behaviour of such particle systems.

Staff of Computational Experimentation

Professor Tatsuki ODA, Assistant Professor Masao OBATA

Computational research in solid state physics (bulk properties, surface properties, and nanostructure properties), development of first-principles molecular dynamics, and basic research

for spintronics applications in computational science (Rashba effect, electric field control of magnetic anisotropy, etc.).

Associate 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, Assistant Professor Kazutomo KAWAGUCHI

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.

Please attach this checklist on top of your application documents

CHECKLIST

for Double-Degree Program Application Documents

KANAZAWA UNIVERSITY

Application Period: July 30 – August 5, 2021

Name in English:_____

Please mark ✔ in the following boxes of the items you enclosed.

All documents must be written in English. Photocopies will not be accepted.

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

☐ **Official Undergraduate Transcripts** ☐ **in English**

☐ **Certificate of Graduation (☐ included in the above Transcripts)** ☐ **in English**

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

☐ **Certificate of Health (*)** ☐ **in English**

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: (Y/M/D)_____

10 月期入学

DOUBLE-DEGREE MASTER'S PROGRAM

KANAZAWA UNIVERSITY

APPLICATION FOR ADMISSION (October 2021) TO THE GRADUATE SCHOOL OF NATURAL SCIENCE AND TECHNOLOGY (Master's degree) KANAZAWA UNIVERSITY

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

2021 年度 10 月期

金沢大学大学院自然科学研究科

(博士前期課程) 入学願書

受験番号 (Do not fill in.)	

Application Category (受験区分):

Special Selection (Double-Degree Master's Program) (特別選抜(二重学位制度))

Division to which you are applying (志望専攻): Computational Science Course in the Division of Mathematical and Physical Sciences (数物科学専攻計算科学コース)

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 Master's Program (DDP 在学期間):

From (YY/MM) : _____ To (YY/MM) : _____

Prospective Period of a 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):

Faculty of Mathematics and Natural Sciences, Universitas Gadjah Mada

(ガジャマダ大学自然科学研究科)

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) Name	(続柄) Relationship	(職業) Occupation	(所在国) 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:

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2021 Kanazawa University Graduate School

Certificate of Health

Graduate Course: Natural Science and Technology

Major: Division of Mathematical and Physical Sciences

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*)