

2009 Applicant Guidelines for Doctoral Programs (First Stage) of Graduate School of Information Science, Nagoya University (Second Round of Admissions)

Important Notice: The Japanese version of Applicant Guidelines for Doctoral Programs of Graduate School of Information Science, Nagoya University serves as the official guidebook. This English translation is provided only for applicants' convenience. All notions should be understood as Japanese time, currency, regulations, organizations and so on, unless otherwise specified.

The Graduate School of Information Science invites applicants for admission to the first stage of doctoral programs (equivalent to a master's course) for the academic year 2009, in accordance with the following guidelines.

1. Qualifications for Application

Applicants must meet one of the following conditions:

- (1) University graduates, or will graduate from university by March 31, 2009
 - (2) Persons who have obtained or will obtain, by March 31 2009, a bachelor's degree from the National Institution for Academic Degrees, which as specified by the School Education Law, Article 104, Section 4, No.1
 - (3) Persons who have completed, or will complete by March 31, 2009, 16 years of academic education in a foreign country
 - (4) Persons who have completed, or will complete by March 31, 2009, 16 years of academic education in Japan through correspondence courses run by foreign educational institutes.
 - (5) Applicants who have completed an undergraduate course of a foreign university in Japan, which is an educational establishment approved in that particular foreign country (the applicants must have completed 16 years of school education in their education system) and have qualifications approved by the Ministry of Education, Culture, Sports, Science and Technology, Japan
 - (6) Applicants who have completed (or will complete by March 31, 2009) an advanced professional course of a professional training college. The course must fulfill the requirements set by the Ministry of Education, Culture, Sports, Science and Technology (e.g., offering a minimum of four years of education) and be recognized by the Ministry of Education, Culture, Sports, Science and Technology, as such. Applicants must have graduated from the course after the date of approval by the Ministry of Education, Culture, Sports, Science, and Technology.
 - (7) Persons who have qualifications approved by the Minister of Education, Culture, Sports, Science and Technology, Japan. (Notification No.5 of the Ministry of Education, 1953)
 - (8) Persons who have completed or will complete more than 3 years at university by March 31, 2009 or those who have completed 15 years of education in an education system in a foreign country or enrolled in a foreign university in Japan, which is approved by that foreign country's school education system (the applicants must be recognized to have completed 15 years in the education system), and those who have qualifications approved by the Ministry of Education, Culture, Sports, Science and Technology, Japan and who have been recognized by our Graduate School as having excellent results of the required credits.
- Note: Those who submit application forms on the basis of requirement No. 8 above must refer to "Candidates Applying under Requirement (8)" in page 9.
- (9) Persons who will be 22 years of age or over as of March 31, 2009, and have been recognized by our Graduate School, based on the results of individual examinations of the applicant's qualifications, as having academic abilities equivalent or superior to university graduates.

Note: Those who submit application forms on the basis of requirement No. 9 above must contact the Graduate School by December 10(Wed.), 2008.

2. Numbers of Students to Be Admitted

Dept. of Computer Science and Mathematical Informatics	A few students
Dept. of Information Engineering	A few students
Dept. of Media Science	A few students
Dept. of Complex Systems Science	A few students
Dept. of Systems and Social Informatics	A few students

There may be cases whereby successful applicants may not be able to receive supervision from the professor of their choice due to educational considerations. It is advised to contact the professor of your choice in advance.

In this round of admission, IT Specialist Course does not accept applications.

3. Application Period

Applications will be accepted between January 14 (Wed.), 2009 and January 20 (Tue.), 2009(except Saturday, Sunday and public holiday). Reception time is from 9:00 a.m. to 4:00 p.m. except 12:00 a.m. to 1:00 p.m.

4. Application Documents

Documents required for all applicants

- (1) Application Form (Complete form prescribed by our Graduate School)
- (2) Examination Card and Photograph Card (Complete cards prescribed by our Graduate School)
- (3) Objectives and study plan (Complete form prescribed by our Graduate School)
- (4) Personal History (Complete form prescribed by our Graduate School)
- (5) Receipt of Payment, Record of Receipt (Enter only your name in forms prescribed by our Graduate School)
- (6) 2 self-addressed envelopes (one for sending Examination Card, the other for correspondence)
You must submit 2 self-addressed envelopes prescribed by our Graduate School with the address at which you will receive the envelopes, prefecture code, and name. A 350-yen stamp should be attached to the envelope for correspondence[I. I.1].
- (7) Address label (Write necessary items on label prescribed by our Graduate School)
- (8) Certificate for (prospective) graduation or a document certifying qualification for application
- (9) Official transcript of academic records (issued by your last university)
- (10) Examination fee (30,000 yen by postal money order, on which name and address of designated payee should not be written[I. I.2])

Documents to be submitted preferably for reference

- (1) If the applicant has a dissertation or other material that indicates his/her research abilities, it is desirable to submit a copy of such material and, if necessary, an abstract.
- (2) If a foreign applicant studying in Japan has taken the Japanese Language Proficiency Test, it is desirable to submit a certificate or a score report. When submitting a copy, write "This document is identical to the original" on the copy, which should then be signed and/or stamped with your seal.
- (3) If the applicant has taken an English proficiency test (STEP, TOEIC, TOEFL etc.), it is desirable to submit a certificate or score report. When submitting a copy, write "This document is identical to the original" on the copy, which should then be signed and/or stamped with your seal. The date of the examination covered by the certificate or score report must be no earlier than April 1, 2005.

Documents to be submitted in special cases

- (1) Applicants for Dept. of Computer Science and Mathematical Informatics who wish to take the oral examination should submit a form for the oral examination (written in the form prescribed by our Graduate School), student handbook, a document which proves (prospective) graduation and the number of credits required for graduation (a copy is accepted). (Those who take the examination directly after graduating from Nagoya University need not submit it.)
- (2) Foreign applicants residing in Japan must submit an alien registration certificate issued by their municipality office. However, those with permanent residency need not submit this document.
Overseas residents must submit a document certifying nationality and resident's eligibility (for example, a copy of your passport showing nationality and resident status).
- (3) Applicants serving in government and other public offices, companies and other organizations, and who will remain in service even after enrollment, must submit the organization's written consent regarding application for admission (no prescribed form).

5. Application Procedures

Applicants must put all documents required for application in the envelope prescribed by our Graduate School for sending application documents, and submit to the Academic & Students Affairs Section, Graduate School of Information Science or send it **by registered mail**.

Points of note

- (1) In case submitting by hand, it is recommended that the applicant him/herself brings the documents
- (2) When sending by mail, it must reach the Office no later than 4:00 p.m, January 20 (Tue.), 2009 by registered mail.
- (3) Admission tickets will be sent to the applicants by mail. (If the ticket does not arrive until two days before the examination, please confirm it with the Academic and Students Affairs Section of the Graduate School of Information Science.)
- (4) Be careful not to submit incomplete application documents since they will not be accepted.
- (5) After an application has been filed, we will not allow any changes to application documents, nor refund examination fees.

6. Selection

6.1 Acceptance of the Results of External English Examinations

Those applicants who submitted results of external English examinations such as TOEIC (limited to open examinations), TOEFL-PBT (Written examination of TOEFL), TOEFL-CBT (TOEFL examination by computer), and TOEFL-iBT (TOEFL examination by internet), the results will be converted to suit the level of our Graduate School and will be compared with the result of the English examination of the entrance examinations and the better result will be taken as the final result. However, for applicants who submit a result of external examinations, if they are absent of the English examination of our Graduate School, the final result will be the score from the external English. The conversion criterion is shown in the following table. It was made by referring to the website of The Educational Testing Network Service.

TOEIC	TOEFL-PBT	TOEFL-CBT	TOEFL-iBT	Converted score
395	433	120	40	40
495	468	147	51	50
590	501	173	61	60
690	536	203	74	70
790	570	230	88	80
890	605	250	100	90
990	640	273	111	100

6.2 Details of Selection Methods

- (1) Successful applicants for admission to our programs will be selected on the basis of overall evaluation of the result of the English examination, specialty examination (written and oral), oral examination and application documents.
- (2) The schedules of English examination, specialty examination and oral examination are shown below.
- (3) Announcement of the venues of English examination, specialty examination and oral examination will be posted on the examination day at the entrance to the Graduate School of Information Science building (see attached map).
- (4) Applicants must arrive at the examination rooms at least 30 minutes before the starting time of the examination.
- (5) In the case of English examination and the written examination of the Department of Computer Science and Mathematical Informatics, if the applicants be late within 30 minutes, he/she can take the exam.
- (6) In the case of Specialty Examination (oral) and oral examination, if the applicants be late, he/she can not take the exam in principle.

(1) English February 12 (Thu.) 10:00 - 11:00 for all candidates
 One dictionary (English-Japanese or English to mother tongue) can be used. However, an electronic dictionary or any dictionary that has more functions than permitted above, such as Japanese-English dictionary, will not be allowed.

(2) Specialty Examination February 12 (Thu.)

Department	Time	Examination subjects (Items in parentheses are topics to be covered.)
Computer Science and Mathematical Informatics	12:30 - 14:00 Specialty Examination (written)	Choose and answer two questions from three questions set out on basic mathematics (linear algebra, calculus) and discrete mathematics.
Information Engineering	12:30 – Specialty Examination (oral)	(a) and (b) below will be carried out for about 30 minutes per applicant. (a) Specialty Examination (oral) on Information Engineering (programming, computer hardware, computer software, fundamentals of computer science) (b) Presentation of the graduation thesis When there is no graduation thesis, presentation of a seminar topic or if neither graduation thesis nor seminar topic are available, presentation on the research theme which the applicant hopes undertake at our Graduate School can be taken instead. In the presentation, the applicant should prepare and bring 15 copies of handouts (A4, one page) for distributing. It is no fixed form for the handouts, but please be sure have the name and number of examinee printed on.
Media Science	12:30 – Specialty Examination (oral)	The examination consists of oral questions on general items on two subjects from the six subjects set out including research content (such as graduation research) for about 30 to 40 minutes per applicant. Those who apply for Media Science should fill out the necessary items in the Research Subject Selection Form (attached) and submit it together with the other application forms. In addition, 10 copies of the outline of applicant's major (Graduation thesis etc.) (one side of A4, no fixed form) should be brought in on the examination day. Analysis/linear algebra Probability/statistics Digital signal processing Sensation/Perception (Questions on basic knowledge about sensation/perception will be asked.) Learning/Memory (Questions on basic knowledge about learning/memory will be asked.) Thinking/problem-solving (Questions on basic knowledge of thinking/problem-solving will be asked.)

Department	Time	Subjects Question range is shown within brackets.
Complex Systems Science	11:45 – Specialty Examination (oral)	The examination will be undertaken for 30 minutes per applicant in the following way. The applicant must use overhead projector or liquid crystal projector to present graduation research or its equivalent in about 10 minutes (maximum 15 minutes). Based upon the presentation, four points including the applicant’s academic ability, research ability, communication ability and willingness will be evaluated. When the presentation is done using a liquid crystal projector, the applicant must bring a PC to connect to. However, it is possible that the projector will not function with certain PCs, just in case, it is better to bring a USB memory and other such recording media as well.
Systems and Social Informatics	12:30 – Specialty Examination (oral)	The following examination will be carried out for about 30 minutes per person. (1) Presentation of graduation research (Approx.10 minutes) Applicants give a presentation on their graduation research or seminar topics into which they put a lot of effort when an undergraduate, or a concrete research theme on which they would like to work at graduate school. All applicants must prepare a handout (one side of A4 and no fixed form) and make 20 copies to distribute at the examination. The presentation could be carried out according to this paper or using a PC (which the applicants must bring.). A liquid crystal projector will also be prepared in the examination room, which applicants may use. (2)Questions & Answers (Approx.20 minutes) Taking all applicants’ major, into consideration, they will be asked questions that evaluate their basic ability. Questions will also be asked directly related to the content of their presentation. Furthermore, applicants’ communication ability and willingness to study further will be evaluated through questions on objectives for applying to this department and their choice of research theme.

(3) Oral Examination

Department	Time
Dept. of Computer Science and Mathematical Informatics	February 13(Fri.) 9:30 -
Dept. of Information Engineering	It is implemented during the Specialty Examination (oral) on February 12(Thu.)
Dept. of Media Science	It is implemented during the Specialty Examination (oral) on February 12(Thu.)
Department of Complex Systems Science	It is implemented during the Specialty Examination (oral) on February 12(Thu.)
Department of Systems and Social Informatics	It is implemented during the Specialty Examination (oral) on February 12(Thu.)

7. Announcement of Admissions

Announcement of admissions will be posted at noon, February 17 (Tue.), 2009, at the entrance of the Graduate School of Information Science building. The results will also be notified to each applicant by mail.

8. Registration Procedures

Registration procedures will be communicated to the prospective students in early March 2009. The procedures should be carried out toward the end of March 2009.

9. Registration and Tuition Fees

(1) Registration fee: 282,000 yen

(2) Tuition fee: 267,900 yen for spring semester (535,800 yen for full year)

Note1: Registration fee should be paid at the time of enrollment. Tuition fee should be paid for Spring semester in April and for Fall semester in October.

Note2: Tuition shall be directly charged from the account specified by the "excusing tuition payment" that should be submitted during the registration procedure.

Note3: If tuition and other fees are revised at time of enrollment or while you are enrolled in our graduate school, the revised payment amount will apply from the time of revision.

10. For Overseas Applicants

(1) Objectives and Study Plan may be written in English.

(2) Convenience for Written Examinations

	English (Written Examination)	Department (Written Examination)
Dept. of Computer Science and Mathematical Informatics	When translating Japanese into English, <i>hiragana</i> will be printed beside each <i>kanji</i> . English-English dictionary may be used instead of English to your mother tongue.	May answer in English (Use of one dictionary allowed)
Dept. of Information Engineering		/
Dept. of Media Science		
Dept. of Complex Systems Science		
Dept. of Systems and Social Informatics		

11. Other Points of Note

- (1) If you have any questions about admissions to our Graduate School, such as application qualifications or documents and selection process, please inquire in advance at the office below.
- (2) For details of research activities of professors, visit our website below.
<http://www.is.nagoya-u.ac.jp>
- (3) Since Nagoya University restricts vehicle entry on to the campus, use public transportation when visiting the University[I. I.3]. for examinations.
- (4) For information (Q & A) regarding admission, you may refer to: <http://www.is.nagoya-u.ac.jp/exam-q-and-a.html>
- (5) Among unsuccessful applicants, those who desire so may learn the results of the examinations by subject.
Request should be made between : February 23 (Mon.) and March 4 (Wed.), 2009, from 10:00 to 16:00 hours.
(Except for Saturdays, Sundays and Holidays)
Applications : Use the form for “Request for Entrance Examination Results” prescribed
by our Graduate School
- (6) We will use personal information such as address, name, birth date, etc. only for admission selection, announcement of admissions, entrance procedures and related matters. We will strictly control personal information and will not use it for any purpose without prior written permission.

Academic & Students Affairs Section
Graduate School of Information Science, Nagoya University
Furo-cho, Chikusa-ku, Nagoya City, Aichi Prefecture
464-8601
Tel. +81-52-789-4721/4722
<http://www.is.nagoya-u.ac.jp/>
E-mail: admission@is.nagoya-u.ac.jp

Candidates Applying under Requirement (8)

1. Candidates Applying under Requirement (8)

Persons who have completed or will complete more than 3 years of university by March 31, 2009 or those who have completed 15 years of education in an educational system in a foreign country or enrolled in a foreign university in Japan, which is approved by that foreign country's school education system (the applicants must be recognized to have completed 15 years in the education system), and those who have qualifications approved by the Ministry of Education, Culture, Sports, Science and Technology, Japan and who have also been recognized by our Graduate School as having excellent results in the required credits.

2. Application for Certificate of Approval as Eligible Applicant

2.1 Application documents

Applicants under Requirement (8) must either submit or mail the following documents by or at 4:00 p.m. on Thursday, December 17, 2008 to the Office of Student Affairs, Graduate School of Information Science, Nagoya University. The set of documents, if mailed, should have "Application for Certificate of Approval as Eligible Applicant." written in red ink on the envelope, and be sent by registered mail.

(1) Application Form for the application under Requirement (8)

Note: Applicants must receive, fill out and sign the form prescribed by the Graduate School

(2) Bibliography

Note: Applicants must receive, fill out and sign the form prescribed by the Graduate School

(3) Official transcript of academic records (issued by applicant's most recently enrolled university, until the first term of the third grade)

(4) Document of recommendation by the applicant's academic advisor at his/her most recently enrolled university (form not specified, written in Japanese or English)

2.2 Notification of the results

Applicants will be notified of the results by three days before the beginning date of the Application Period.

3. Examinations and Application documents

3.1 First examination

Application documents: Persons who have been certified as eligible applicants in the examination of qualifications above must submit the documents specified in 4. Application Documents for the application, except (4) Personal History, (8) Certificate for graduation and (9) Official transcript of academic records.

Passing conditions: Acquisition of truly excellent score in the ordinary entrance examination for the graduate school using the same problems and procedure as ordinary students in the written and oral examinations.

3.2 Second examination

Application documents: Persons who have passed the first examination should submit the official transcript of academic records for the third grade by March 5, 2009.

Passing conditions: The following two conditions must be satisfied. Entrance will not be approved if persons who passed the first examination do not satisfy the following conditions.

(1) Having earned a minimum of three-fourths of the required credits for a bachelor's degree by the end of his/her third year.

(2) Highest ranked grades (i.e. having earned 80 points or more out of 100) in a minimum of 70 percent of subjects listed on his/her grade transcript (excluding elective subjects and subjects graded only by pass or fail from the denominator[I. I.5]).

Nagoya University Graduate School of Information Science

● Outline

Recent development in information technology has a profound influence in a wide range of fields covering human life, culture, art, science and economics. Nowadays, information is an essential element of human society as same as material and energy. With such a background, our Graduate School of Information Science was established in April 2003 by concentrating research and education in many different information-related fields.

In our department, information is treated from different views like engineering, nature science, computer science, literae humaniore, social science, cognitive science, life science and so on. While keep on making efforts to systematize information as a discipline, we also try to develop new research fields via syncretizing current research fields. With such an objective, various advanced researches are taken place in our department, including “mathematical systematism and computational models”, “Globalism-compatible practice system”, “symbiosis of human and machine via expression and explanation of information”, “interaction between individuals in nature and artificial phenomena”, “intelligent activities on fusing and aligning the real and virtual worlds”, and so on. In the purpose of research area syncretizing, we accept applicants from different departments/areas and aim at the education that enables the students to obtain not only the extensive knowledge of information science from foundation to application but also the view of social morals. Furthermore, in order to provide an information environment of rich humanity as well as keep on contributing to the society, many different trials of education and research activities are taken place here.

With a synthetic organization of research and education, our graduate school is responsible for the informative development of Japan and the world.

● IT Specialist Course

1) Object of establishment of the course

The IT (Information Technology) Specialist Course was established through the educational project called “Development of a hub for IT specialists with cutting edge technology adaptation abilities”. The project was adopted as part of the Advanced IT Specialist Promotion Program initiated by the Ministry of Education, Culture, Sports, Science and Technology. The aims of the project are to systematically develop software engineering on the basis of computer science and information/telecommunications, to accommodate cutting-edge software technologies flexibly, and to develop human resources in order to enable its application and transformation into specific skills.

The course allows the study of software engineering from the meta technology perspective and provides a curriculum intended to cultivate meta technology skill development into actual software development by OJL (On the Job Learning). OJL is an amalgamation of PBL (Project Based Learning) and OJT (On the Job Training).

2) Relationship with the major

The IT Specialist Course was established as a common course of five different majors in the Graduate School of Information Science. Those who show interest in the course at the entrance exam of Doctoral Programs (First Stage) of Graduate School of Information Science, and have passed the exam, are eligible to select the IT Specialist Course. The students of the IT Specialist Course are to belong to the major that they have previously passed. The students who select the course are required to take its subjects and the assigned subjects of their respective majors.

3) Contact details

For contact details, see the website of the Graduate School of Information Science; <http://www.is.nagoya-u.ac.jp>.

● Admission Policy

We welcome students who have a strong will and the necessary academic abilities to understand the influence of information science on science and society, to investigate their theories and technical foundations and to try to apply them in practice

● Degree

In the first stage of the doctorate course in our Graduate School, those who have completed requisite studies will be awarded the degree Master of Information Science. However, under certain circumstances, Master of Engineering or Master of Arts could also be awarded.

● Outline of Departments

Our Graduate School comprises the Department of Computer Science and Mathematical Informatics, Department of Information Engineering, Department of Media Science, Department of Complex Systems Science and Department of Systems and Social Informatics. In regard to the names and contacts of professors and researchers in respective departments, please refer to <http://www.is.nagoya-u.ac.jp/>

1) Department of Computer Science and Mathematical Informatics

The Department of Computer Science and Mathematical Informatics conducts research and education in the Computer science and Mathematical Informatics, which are foundations of information science. Concretely, our research contains mathematical logic, discrete mathematics, probability analysis, numerical analysis, computational complexity, coding theory, cryptography theory, algorithm, computation model theory, program semantics, quantum information, quantum computing theory, optimization and so on.

In the research aspect, our objective is to develop the information science deeply and abundantly by centering on reconstructing and analyzing of mathematical model, which relates to information. In the educational aspect, we hope to nurture highly specialized engineers and researchers who have essential knowledge of computer science and mathematical informatics.

2) Department of Information Engineering

In this department, we study and research optimal hardware and software for user-friendly and secure information systems by using information engineering methodology. We concern ourselves with the design and development of such information engineering systems. Furthermore, based upon the experience of study and research in our Department of Information Engineering, formerly in the Faculty of Engineering, which accommodating the remarkable development of semiconductor integrated circuit technology and information communication technology, we aim to create further developments in information engineering.

Through the development of semiconductor integrated circuit technology, compact size information systems and integrated systems are embedded in machinery such as home electrical appliances and automobiles. Such information processing machinery is, in turn, connected to a mega-sized information system, and can be used in the mobile environment. As a result the software architecture which underpins the information system being constructed becomes larger and more complex. In this department, by providing education and study of principles and technology, which can be applied to the design and construction of information systems for the next generation, we hope to nurture specialists who will be able to take leading roles as highly advanced information engineers and scientists.

3) Department of Media Science

Information plays a major role in various human activities in industry, economy, society, education, art, medicine/social welfare, and the home. In such an information-based society, information needs to be produced and expressed swiftly with precision.

In this Department, our purpose is to study and research the basics of media science, the creation of intelligent machinery which process and express media, and to study ways to clarify the recognition function of human beings that are indispensable in developing a functional information society, and eventually hope to nurture competent media scientists and media engineers.

4) Complex Systems Science

Complex systems in nature and society comprise the network of many and varied elements such as molecules, neurons, agents which can communicate, convert and accumulate information, and which can therefore be understood as a distributive information system. A main feature of such complex systems is to generate dynamically and autonomously an order structure and function, which cannot be expected from the basic component's features. Complex systems science, by deeming self-organization process of such order and function as information processing, aims to acquire a universal viewpoint. The objective is to investigate various natural and artificial systems and through synthesizing theories, experiments and computation methods, we will attempt to clarify the principle of universal information processing, which is hidden in varied objects.

In this course, we will study the development of innovative computation methodologies to analyze complex systems without using established reductionist methodology, but we will develop constructive method by "understanding by creating" model systems. By opening up distributive methodology which designs information systems based on self-organization of distributed elements, we hope to nurture engineers and scientists who are able to initiate new ideas through using organization theory thinking and distributive thinking.

5) Department of Systems and Social Informatics

In this Department, the social environment in which development of information technology enhances an information-intensive society, our research takes the viewpoint of physical matter/phenomena of the real world and fusion of logical objectives/processes. The study will be focused on environment, organization, and function which are cooperatively and complementarily fusion-capable and which are organized by the real world and virtual world that is superior for human society. Paradigm or model that fosters, creates and educates humans as well as that which is related to the construction of activity space supported by human wisdom and creative action is already established. Therefore, we would like to explore construction and architecture of a social system that is knowledge-dependent through the use of information technology, and for another, we would like to evaluate and consider the various problems that are generated in the social environment and social organization through the development of information technology. This will lead to research into the human role and organization of human society in an integrated space between the real world and virtual world.

In this course, from the standpoint of nurturing human resources that can meet the needs of the information age, we would like to raise for the awareness of the importance of information processing education, information technology development/application, functional design/development of social information systems, databases for social information environment, and development/construction of a user interface. Thus, we aim to educate competent personnel who can actively support and develop the information society.