

# 2010 Applicant Guidelines for Doctoral Programs (Second Stage) of Graduate School of Information Science, Nagoya University

**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.

The Graduate School of Information Science invites applicants for admission to the second stage of doctoral programs, in accordance with the following guidelines.

## 1. Qualifications for Application

Applicants must meet one of the following conditions:

- (1) Master's degree or professional degree holders, or those who are expected to obtain one of the above degrees by March 31, 2010
- (2) Persons who have obtained the equivalent of a master's or professional degree in foreign countries
- (3) Persons who have completed or will complete by March 31, 2010 a course of study in Japan through a correspondence course run by foreign educational institutes, to obtain the equivalent of a master's or professional degree
- (4) Persons who have completed a course of study in a foreign educational facility in Japan, which is recognized as forming part of the education system in that foreign country, and which is approved by the Minister of Education, Culture, Sports, Science and Technology, Japan as completing a designated course of study and who hold a master's or professional degree or the equivalent of such a degree
- (5) Persons who have been approved by the Minister of Education, Culture, Sports, Science and Technology (Notification No.118 of the Ministry of Education, 1989) (Note)
- (6) Persons who will be 24 years of age as of March 31, 2010, and who have been recognized by our Graduate School, based on the results of individual examinations, as having academic abilities equivalent or superior to master's degree holders (Note)

(Note) Applicants who meet condition (5) (6) above must contact our Graduate School no later than December 9(Wed.), 2009.

## 2. Number of Students to Be Admitted

Dept. of Computer Science and Mathematical Informatics	5
Dept. of Information Engineering	7
Dept. of Media Science	8
Dept. of Complex Systems Science	8
Dept. of Systems and Social Informatics	7

## 3. Application Period

Applications will be accepted between January 13 (Wed.) and January 19 (Tue.)(except for Saturday and Sunday ), 2010 from 9:00 to 16:00 (except between 12:00 and 13:00).

## 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, a copy of the Receipt of Payment (Enter only your name in forms prescribed by our Graduate School.)
- (6) 2 self-addressed return 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. You must attach a 350-yen stamp on the return envelope for sending Examination card. (However, for overseas students relevant charges for the overseas will be applicable).
- (7) Address label (Write necessary items on the label prescribed by our Graduate School.)
- (8) Certificate for (prospective) acquisition of master's degree, or certificate for (prospective) completion of master's course
- (9) Official transcript of academic records (issued by your last graduate school)
- (10) Examination fee (30,000 yen by postal money order, on which name and address of designated payee should not be written.) However, in the case of applicants who wish to advance to the second stage of our doctoral programs directly after finishing the first stage, examination fee and receipt-related forms listed in (5) above are not required (For overseas applicants are requested to contact us if ordinary postal order (Money Order) is not available).
- (11) Master's thesis (copy is acceptable) and an abstract of the thesis (if applicant finished the master's course without submitting a master's thesis, a research paper can be substituted.) However, applicants who are expected to obtain a master's degree by March 31, 2010 need not submit a master's thesis, only an abstract of the thesis.  
In preparing an abstract, applicants may either write in the form prescribed by our Graduate School or type the entire form using a word processor etc. Additional sheets may be used as necessary.

### Documents to be submitted only by applicable candidates

- (1) 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).
- (2) 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).
- (3) If a foreign applicant studying in Japan has taken the Japanese Language Proficiency Test, 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.
- (4) If the applicant has taken an English proficiency test (STEP, TOEIC, TOEFL etc.), it is desirable to submit a copy of the certificate or score report. When submitting the 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 report must be no earlier than April 1, 2006.
- (5) If the applicant has material other than a master's thesis that indicates his/her research abilities, it is desirable to submit a copy of such material and, if necessary, an abstract.

## 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 16:00, January 19 (Tue.), 2010.
- (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

- (1) Successful applicants for admission to our programs will be selected on the basis of overall evaluation of the result of the oral examination and application documents.
- (2) The oral examination schedule is shown below. However, applicants who cannot meet the schedule due to exceptional circumstances may be allowed to take the examination at a later date. Be sure to contact the Academic & Students Affairs Section (kyomu-gakusei-gakari), Graduate School of Information Science, at the time of filing an application.
- (3) Announcement of the oral examination venues will be posted on the examination day at the entrance to the Graduate School of Information Science building (see attached map).

### Oral examination

The oral examination comprises presentation of master's thesis or substituted research paper and research plan during the doctoral program (totally 20 minutes), questions and answers related to the presentation, and also questions about the major academic field that the candidate is applying for admission.

Department	Date	Time
Computer Science and Mathematical Informatics	February 15 (Mon.)	9:30 -
Information Engineering	February 15 (Mon.)	9:30 -
Media Science	February 15 (Mon.)	9:30 -
Complex Systems Science	February 15 (Mon.)	9:30 -
Systems and Social Informatics	February 15 (Mon.)	9:30 -

Notes: During the presentation, a PC projector can be used. It should be noted, however, that the applicant needs to bring a personal computer to connect to the PC projector.

## 7. Announcement of Admissions

Announcement of admissions will be posted at noon, February 18 (Thu.), 2010 at the entrance to the Graduate School of Information Science building. The results will also be communicated to each applicant by mail.

## 8. Registration Procedures

Registration procedures will be communicated to the prospective students in early March 2010. The procedures should be carried out toward the end of March 2010.

## 9. Registration and Tuition Fees

(1) Registration fee: 282,000 yen

(2) Tuition fee: 267,900 yen (535,800 yen for one 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: If tuition and other fees are revised at time of enrollment or while you are enrolled in our institution, the revised payment amount will apply from time of revision.

## 10. 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) Before deciding which research group or professor/lecturer's laboratory you wish to belong to for filing the application, be sure to contact the professor/lecturer concerned.
- (3) For details of research activities of professors/lecturers, visit our website below.
- (4) Since Nagoya University restricts vehicle entry on to the campus, use public transportation when visiting University for examinations.
- (5) We will use personal information such as address, name, birthday, etc. only for admission selection, announcement of admissions, entrance procedures and related matters. We will strictly control personal information and will not use personal information for any other purpose.

### ※ Notices in case of unforeseen Circumstances

Department's home page <http://www.is.nagoya-u.ac.jp> will be updated for changes in the selection items or change in the examination schedule due to natural disaster or spread of pandemic H1N1.

Please make sure to check it before applying and before appearing for the exam.

Academic & Students Affairs Section  
Graduate School of Information Science, Nagoya University  
Furo-cho, Chigusa-ku, Nagoya City, Aichi Prefecture  
464-8601  
Tel. +81-52-789-4721/4722 Fax: +81-52-789-4800  
<http://www.is.nagoya-u.ac.jp/>  
E-mail: [admission@is.nagoya-u.ac.jp](mailto:admission@is.nagoya-u.ac.jp)

# Nagoya University Graduate School of Information Science

## ● Basic Philosophy

Along with the spread of the information society, “Information” has itself become a vital part of our current lives ranking alongside materialistic things and energy as important elements that make up our human society. The Graduate School of Information Science will treat “Information” as a study approached from the diverse perspectives of engineering, natural science, computer science, human science, social science, cognitive science and life science with the aim of creating an entirely new field that integrates existing studies. The Graduate School has the educational goal of training researchers, high-level specialist engineering professionals and instructors needed in our information society. A yet further and deeper educational goal is the fostering of individuals having a deep core of academic knowledge and top-ranking capabilities needed for holding their own in an occupation requiring a sophisticated level of expertise acquired by education and research into both the theoretical and applied aspects of our information society, as well as able to contribute to a richer culture. The basic policy of the Graduate School is not only developing human talent capable of carrying out cutting edge research on the frontiers of information science, while having a sense of societal ethics through an understanding the interaction of society and culture; but also to engage in systematic instructional and research efforts that incorporate diverse new efforts and approaches.

## ● Education

It is expected that “information” studies will continue to develop in parallel with various other academic fields it concerns. For this reason, we accept students from many majors and backgrounds. This is because the goal is to include a wide range of students in the work team from basic to applied information sciences. Our educational program takes place according to the following policy.

1. Systematic education to broadly learn about information.
2. Education to acquire skills to identify and clarify the effects of information in various sciences.
3. Education on technological, engineering and information ethics, with consideration to how it applies within the scope of social life.
4. Education to acquire skills to understand and analyze social demands.
5. Education to develop human resources with the potential of good communication and expression skills.
6. Education to acquire practical knowledge on how to actually operate an information system.

As it is apparent, this program not only focuses on advanced studies and research on information science. Instead, it also incorporates social and cultural aspects of life, to develop human talent capable of understanding socio-cultural needs with insight on social ethics. The curriculum is original and reflects these policies. An example would be the multi-supervisory system for each student, so students can acquire a wide perspective of their needs. It is also mandatory for students to take courses from other departments to earn credits for this course. Students also have access to special lectures on the most advanced, recent topics by part-time lecturers. There are also research internship programs with enterprises for students to experience the entire flow of research and development. The Graduate School of Information Science is also promoting new educational styles such as “OJL (On the Job Learning) Centered Education for Leading Information Technology Professionals”.

## ● 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 doctorate course (second stage) in our Graduate School, those who have completed requisite studies will be awarded the degree Doctor of Information Science. However, under certain circumstances, Doctor of Engineering or Doctor 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 lecturers in respective departments, please refer to <http://www.is.nagoya-u.ac.jp/>

### 1) Department of Computer Science and Mathematical Informatics

Our Department conducts study and research in the basic domain of Computer Science including design, analysis and efficiency in information processing, as well as in the domain of Mathematical Informatics,, which aims to apply information-related domains through construction and analysis of mathematical models of various phenomena.

The nucleus of our Department consists of the basic domain of Computer Science including Algorithm Theory, Computation Theory, Logical Representation of Knowledge, Mathematical Science related to Information Science especially applications to study of algebra and its application to coding theory and cryptography, mathematical logic and computation theory, quantum computing theory, construction of mathematical models and research of numerical analysis, and the domain of probability analysis and its application to information theory.

In brief, in our Department, selected scholars are nurtured as highly specialized engineers and researchers in Basic Information Science.

### 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, 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 which are embedded in electric home appliances, automobiles, etc. are realized as integrated systems. 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 system 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.