2012 Applicant Guidelines for Doctoral Programs (First 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. 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 2012, 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, 2012
(2) Persons who have obtained or will obtain, by March 31, 2012, 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, 2012, 16 years of academic education in a foreign country
(4) Persons who have completed, or will complete by March 31, 2012, 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, 2012) 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, 2012 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 Qualifications for Application (8) above must refer to "Candidates Applying under the Qualifications for Application (8)" in page 8.
(9) Persons who will be 22 years of age or over as of March 31, 2012, 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 the Qualifications for Application (9) above must contact the Graduate School by June 8, 2011

2. Numbers of Students to Be Admitted

Dept. of Computer Science and Mathematical Informatics	19
Dept. of Information Engineering	26
Dept. of Media Science	24
Dept. of Complex Systems Science	36
Dept. of Systems and Social Informatics	21

3. Application Period

Applications will be accepted between July 6 (Wed.) and July 12 (Tue.), 2011 (except for Saturday and Sunday). For applicants to the Dept. of Computer Science and Mathematical Informatics who wish to take a viva voca, applications will be accepted between June 8 (Wed.) and June 14 (Tue.), 2011.

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. (For oversea applicants who have difficulties to gain a 350-yen stamp, please contact us.)
(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) (For oversea applicants who have difficulties to gain postal money order, please contact us.)
(11) If the applicant has a dissertation or other material that indicates his/her research abilities, a copy of such material and, if necessary, it is desirable to submit an abstract.

Documents to be submitted in special cases
(1) Applicants for Dept. of Computer Science and Mathematical Informatics who wish to take the viva voca should submit a form for the viva voca (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) Applicants applying for Dept. of Information Engineering, Media Science and Systems and Social Informatics are asked to submit a copy of score sheet of their external English ability tests, like TOEIC (Open test only), TOEFL-PBT(Paper-Based Test), TOEFL-CBT(Computer-Based Test), TOEFL-iBT next generation (Internet Based test).Sign and self attest the photocopy for authenticating it by stating `True copy of the original`. Further, also make sure to submit the score sheets which valid after 1st April 2008.
(3) Applicants applying for Dept. of Computer Science and Mathematical Informatics and Complex System Science can get their external English tests results and the entrance English exam results combined as mentioned in (1)6.1 of page number 3. Those who desires to do so should submit a photocopy of their English ability test score sheet same as (1). Sign and self attest the photocopy for authenticating it by stating `True copy of the original`. Further, also make sure to submit the score sheets which valid after 1st April 2008.
(4) 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).
(5) 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).
(6) 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.

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 Graduate School 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., July 12 (Tue.), 2011 (June 14 (Tue.) for applicants to the Dept. of Computer Science and Mathematical Informatics who wish to take a viva voca) 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 Graduate School 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) You may supplement the result of your external English ability tests by August 3, 2011 (Wed), no later that 16:00, either in person or through registered mail. We do not accept any submission or replacement after the deadline. If the result doesn't arrive before the deadline, the application may be cancelled.

6. Selection

6.1 Acceptance of the Results of External English Examinations

(1) Those applicants for Dept. of Computer Science and Mathematical Informatics and Complex System Science 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, it is optional to take the English examination of our Graduate School.

(2)In case of applicants applying for Dept. of Information Engineering, Media Science and Systems & Social Science, the test scores of the external English tests like, TOEIC (Open test only), TOEFL-PBT(Paper-Based Test), TOEFL-CBT(Computer-Based Test), TOEFL-iBT next generation (Internet Based test) will considered for their English ability. There will be no written entrance exam for 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

6.1 Outline of Selection Method

The method used for selection differs according to the department as shown below.

A. Dept. of Information Engineering, Dept. of Media Science and Dept. of Systems, Dept. of Complex Systems Science and Social Informatics
Successful applicants for admission to our departments will be selected on the basis of overall evaluation of the result of "written and viva voca" and application documents.

B. For Dept. of Computer Science and Mathematical Informatics
Successful applicants will be selected on the basis of overall evaluation of the result of "viva voca" or "Written and viva voca" and application documents.
Among the applicants, those who are "in the 4th year of university and have obtained three quarters of the credits necessary for graduation (except for optional and pedagogical subjects), and have received Excellent or A in more than 50 percent of their credits can request to take the "viva voca." Should you wish to take the "viva voca," you must submit the viva voca request form at the time of application. From among those who wish to take the viva voca, applicants (who qualify) will be selected and take the "viva voca." Successful applicants of the "viva voca" do not have to take "written and viva voca." However, unsuccessful applicants of the "viva voca" will have to take "written and viva voca."
The "viva voca" will take place as long as it does not exceed the preset maximum number of applicants to undertake "viva voca" and by respective departments. The result of selection will be communicated to all the applicants who submitted the request form when sending the Examination Card. In addition, the number of successful applicants for "viva voca," though it differs from department to department, is very low.
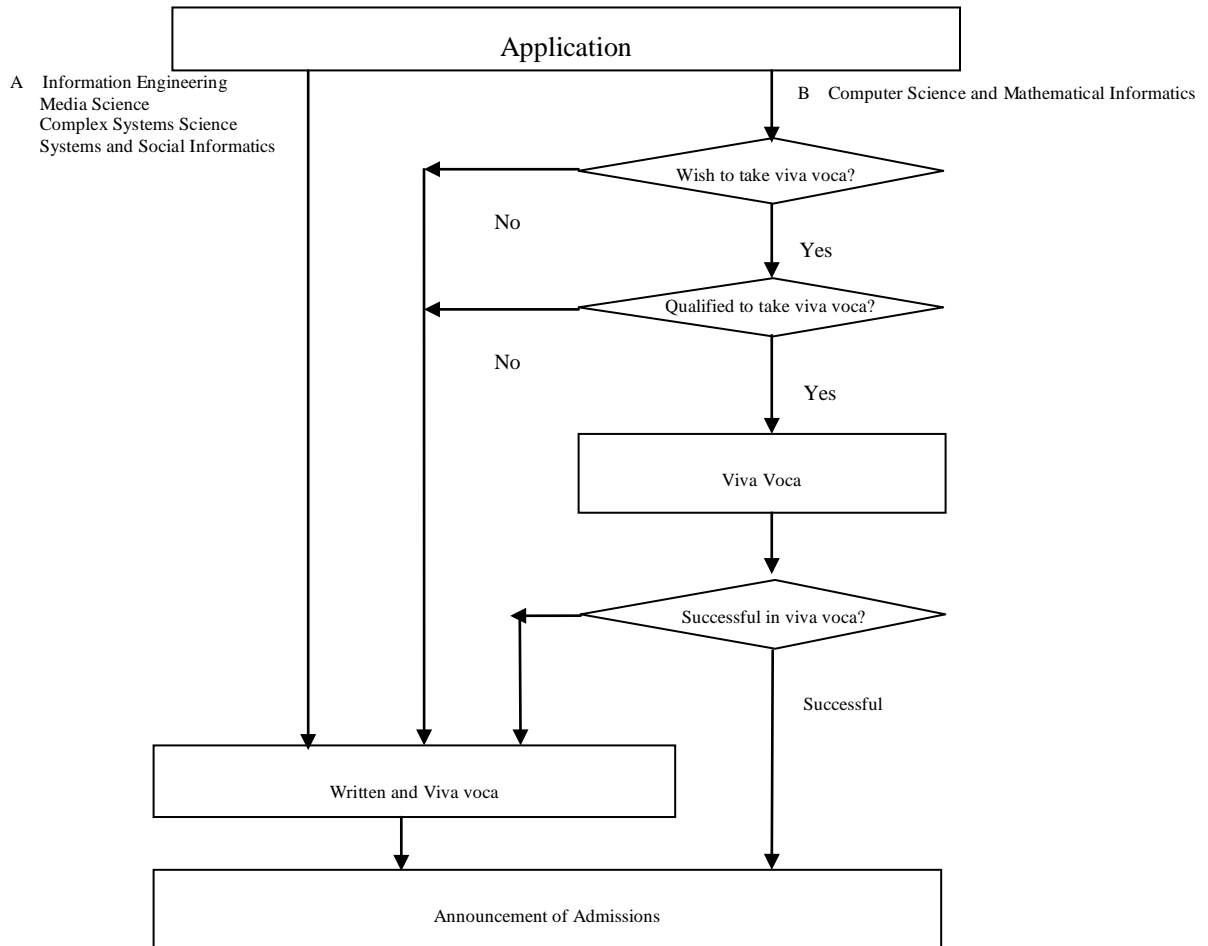
Fig. Outline of Selection

6.3 Details of Selection Methods

(1) The schedules of "Viva voca" and "Written and viva voca" are shown below.
(2) Announcement of the examination venues will be posted on the examination day at the entrance to the Graduate School of Information Science building (see attached map).
(3) Applicants must arrive at the entrance to the Graduate School of Information Science building at least 30 minutes before the starting time of the examination and follow the instruction of the clerk in charge.
(4) Applicants can take "written examination" within 30 minutes late for starting time.
(5) On general principle, applicants cannot take "viva voca", if being late for starting time.

A. Viva voca   July 9 (Sat.)
   The viva voca will comprise questions and answers about the subjects specified below for approximately 30 minutes per person. The result will be communicated to the applicants by mail after about one week.

Department	Time	Subject
Computer Science and Mathematical Informatics	12:00 -	Basics about Mathematics or Computer Science, and the major academic field of the professor with whom the candidate wishes to work

B. Written examination   August 9 (Tue.)
(1) English

Department	Time	Subject
Computer Science and Mathematical Informatics	10:00 - 11:00 (Written Test)	Using or carrying dictionaries is strictly prohibited
Complex System Science	10:00 - 11:00 (Written Test)	Using a dictionary from English to native language or from English to Japanese is permitted. However, an electronic dictionary or any dictionary that has more functions than permitted above, such as Japanese-English dictionary, will not be allowed.

(2) Academic field

Department	Time	Examination subjects
Computer Science and Mathematical Informatics	12:30 - 15:30	There will be 10-12 questions on the subjects below and you should select three questions to be answered: Linear algebra, Calculus, Discrete mathematics, Mathematical logic, Statistics, Probability theory, Differential equation, Quantum mechanics, Algorithm design method, Automata theory, Programming (see Note in the margin)
Information Engineering	12:30 - 15:30	Choose at least 1 subject out of the following (4)-(6) subjects and 2 other subjects out of the following (1)-(6) subjects, and give answers. (1) Calculus/Linear algebra (2) Probability/Statistics (3) Programming (4) Fundamentals of computer science (Automata theory, Mathematical logic, Discrete mathematics) (5) Computer hardware (Logic circuit, Computer hardware, Computer architecture, Information network) (6) Computer software (Algorithm, Operating system, Compiler, Nonprocedural language, Software design)

Department	Time	Examination subjects
Media Science	12:30 - 15:30	Choose three subjects out of the following eight subjects and give answers (see Note in the margin). Calculus/Linear algebra Probability/Statistics Programming Digital signal processing Sensation/Perception (Questions on basic knowledge of sensation/perception) Learning/Memory (Questions on basic knowledge of learning/memory) Thinking/Problem solving (Questions on basic knowledge of thinking/problem-solving) Cognitive synthesis (Questions on sensation/perception, learning/memory, thinking/problem-solving to test logical thinking ability. Out of three essay tests, choose one to answer.)
Complex Systems Science	12:30 - 15:30	Out of about 20 questions from the following fields, choose 3 questions to answer (see Note in the margin). Basics of Mathematics: Linear algebra, Calculus Basics of Physics: Dynamics, Electromagnetics, Quantum mechanics, Statistical thermodynamics Basics of Chemistry: Organic chemistry, Biochemistry, Physical chemistry, Quantum chemistry Basics of Biology: Molecular biology, Molecular genetics Basics of Geoscience: Geology, Geophysics, Geochemistry, Geography Basic of Information Science: Algorithm, Programming, Basics on computer, Basics of complex system

		Basics of Anthropology: Environmental archeology, Eco-anthropology, Scientific study of cultural property Basics of Engineering: Strength of materials, Thermo-hydrodynamics, Measuring and control Critical Thinking
Systems and Social Informatics	12:30 - 15:30	Short essay (Requisite) Choose 2 subjects out of the following 10 subjects to answer (see Note in the margin). Probability/Statistics Programming Data engineering (Database, Information management system) Knowledge engineering (Knowledge processing, Patternized information processing) System software (Operating system, Information network) Electronic sociology system (Electronic government and regional informatization, Web system and CG, Information technology and education/museum) Information design (Information and design, Visual literacy, Media and art) Basics of philosophy (History of philosophy, Philosophy of Science, Ethics, Social philosophy, Aesthetics) Logical thinking (Logic, Critical thinking) Informatics and society (Information and editing, Information and ethics, Information and art) For further details about content of the examinations, please refer to the following website. http://www.ss.is.nagoya-u.ac.jp/exam.html

C. Viva voca   August 10 (Wed.)

Department	Time
Dept. of Computer Science and Mathematical Informatics	9:30 -
Dept. of Information Engineering	9:30 -
Dept. of Media Science	9:30 -
Department of Complex Systems Science	9:30 -
Department of Systems and Social Informatics	9:30 -

7. Announcement of Admissions

Announcement of admissions will be posted at noon, August 12 (Fri.), 2011, 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 2012. The procedures should be carried out toward the end of March 2012.

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(on the first year, in May) 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 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	Nothing Specific	May answer in English (Use of one dictionary allowed)
Dept. of Information Engineering		May answer in English You may bring one dictionary such as a Japanese-English dictionary.(For specific Terminologies, *hiragana* and English translation will be printed.)
Dept. of Media Science		May answer in English. You may bring one dictionary such as a Japanese-English dictionary.(For specific Terminologies, *hiragana* and English translation will be printed.)
Dept. of Complex Systems Science	When translating Japanese into English, *hiragana* will be printed beside each *kanji*. English-English dictionary may be used instead of English to your mother tongue.	May answer in English (Use of one dictionary allowed)
Dept. of Systems and Social Informatics		May answer in English. You may bring one dictionary such as a Japanese-English dictionary.(For specific Terminologies, *hiragana* and English translation will be printed.)

Note: Electronic dictionaries are not allowed.

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. for examinations.
(4) For information regarding admission, you may refer to: http://www.is.nagoya-u.ac.jp/candidate/
(5) Among unsuccessful applicants, those who desire so may learn the results of the examinations by subject.
   Request should be made between   : August 25 (Thu.) and September 2 (Fri.), 2011, 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.

Notices in case of unforeseen Circumstances
   Department's website 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 infectious disease.

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

Graduate School Students Affairs Section
Graduate School of Information Science, Nagoya University
Furo-cho, Chikusa-ku, Nagoya City, Aichi Prefecture
464-8601

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E-mail: admission@is.nagoya-u.ac.up

Candidates Applying under the Qualifications for Application (8)

1. Candidates Applying under the Qualifications for Application (8)

Persons who have completed or will complete more than 3 years of university by March 31, 2012 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 the Qualifications for Application (8) must either submit or mail the following documents by or at 4:00 p.m. on Wednesday, June 15, 2011 to the Graduate School Students Affairs Section, 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 viva voca.

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, 2012.

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 (rank A or more) (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).

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. Th e 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 sociocultural 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 Centered Education for Leading Information Technology Professionals".
OJL: On the Job Learning

● **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

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, 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.