

Course Number	09009
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2009 「The International Priority Graduate Programs (PGP)」

~Advanced Graduate Courses for International Students~

【1. Profile of the University】

①University Department	Nagoya University Graduate School of Medicine		
②President	Michinari Hamaguchi		
③Address (Headquarters)	Furo-cho, Chikusa-ku, Nagoya, 464-8601, Japan		
④Contact	Division	School of Medicine Student Affairs Division	
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⑤Web-Address	http://www.med.nagoya-u.ac.jp/english01/		
⑥Enrollment (only GraduateSchool)	1,025 (include MEXT's Scholarship Students: 283)		

【2. Outline of the Course】

①Course	International graduate course for integrated molecular medicine against neurodegenerative and neoplastic diseases
②Degree	Doctoral Course
③Form	the program executed by a single university.
④Graduate Course, Department	Graduate School of Medicine Program in Cell Information Medicine
	(Address)65 Tsurumai-Cho,Showa-Ku,Nagoya,466-8550,Japan
⑤Collaboration (Universities, Graduate courses, Departments)	Graduate School of Medicine Program in Integrated Molecular Medicine, Program in function Construction Medicine and Program in Health and Community Medicine
⑥Quota	20(include MEXT's Scholarship Students: 3) (include Japanese : 0)
⑦Faculties	55 (Fulltime:48 Fulltime(other department):5 Parttime:2)
⑧Representative of the Course	Job Title Dean of the Graduate School of Medicine
	Name Gen Sobue

【3. Contents of the Course】

1. Overview and features of the program

Overcoming neurodegenerative diseases and malignant tumors is one of the most challenging issues facing the 21st century. In training medical experts to face this challenge, a global approach, rather than simply targeting Japanese researchers, is needed. Having served as an educational and research center simultaneously specializing in neurology and oncology, a combination unique in the world, Nagoya University Graduate School of Medicine has developed its own educational and research system. The objective of this program is, through utilization of this unique system, to provide education to both Japanese and international students to prepare them to play a leading role globally as researchers who can contribute to overcoming these diseases with novel treatments such as molecular targeting treatment. We have successfully proven on many occasions that the integrated, interdisciplinary research of neurodegenerative diseases and malignant tumors can produce better outcomes in treating them. For the benefit of international students in our doctoral courses, systematic coursework hands-on-learning programs, discussions and interdisciplinary exchange programs are provided in English. Through these intellectual programs, students are encouraged to form a network of researchers. By the time they receive their doctoral degree, they can address diseases from two different perspectives, both neurological and oncological; and become fully prepared for and engaged in discovering treatment methods.

2. Educational and instructional systems (A system to assist students in preparing papers and reports)

<Orientation for new international students>

Students from overseas preferentially admitted to this program are provided with orientation at the start of the program in October by faculty members of the graduate school education board and staff of the Student Affairs Division. The orientation includes explanations about this program as well as guidance on the Library, equipment and facilities available for student use, and welfare support systems. These students share the same laboratory with other international students admitted under the general program and Japanese students to facilitate communication with each other.

<Educational events during the first academic year>

(1) Series of systematic course works: "Neuroscience Course"

The Neuroscience Course will start in October as one of the systematic course works. The Neuroscience Course, which is designed for young researchers and graduate students who pursue research aiming at overcoming neurodegenerative diseases and malignant tumors, extensively covers from basic neurobiology to clinical knowledge regarding degenerative, psychiatric, and other diseases. While undergoing continuous improvement both in terms of quality and quantity since its establishment in the academic year 2005, the lecture series has contributed to improving young students' knowledge and skills. Currently, about 15 lectures are provided by intra-extramural experts in relevant fields in the period from October to March (A lecture consists of about one-hour lecture followed by about a 30-minute Q&A session). With most lectures are provided in English in academic year 2009 and will continue to be so in years to come, these lectures serve as an introductory phase for international students preferentially admitted to this program to develop their own learning strategies immediately after enrolling in the program, as well as to provide them with opportunities for regular interactions with students from other laboratories.

(2) International symposium

In November, a two-day Global COE-sponsored international symposium addressing issues ranging from basic science to diseases is annually held. Speakers are invited from around the world. Young researchers and graduate students of Nagoya University and overseas universities are also provided with opportunities to make poster presentation sessions. Through the symposium, students preferentially admitted to this program are able to come into contact with cutting-edge research and also to build close relationships with other researchers.

(3) Overnight retreat

An overnight retreat -- a two-day program for young researchers to present their research findings -- is held in February. This retreat is characterized in particular by being planned and organized by young researchers, including graduate and postdoctoral students and assistant professors. The first retreat was held in the academic year 2008 at an accommodation facility adjacent to the National Center for Geriatrics and Gerontology. There are also facilities for health promotion and medical exhibitions on the premises. International students were encouraged to participate in steering meetings and actively engage in making proposals. Of 22 presentations, 11 were provided in English, including those by researchers from Holland and Spain who were invited under the Invitation Program for Young Foreign Researchers, those by international students studying at Nagoya University Graduate School of Medicine, and those by young researchers at the National Center for Geriatrics and Gerontology. Even in presentations made in Japanese, slides used during the presentations were prepared in English for non-Japanese-speaking participants. All posters used for poster sessions were also prepared in English. Discussions in these poster sessions in English were very lively. In the round-table-discussion with invited independent young researchers, participants talked long into the night about why they wanted to study abroad, how they became independent researchers, and their failures, dreams and concerns. This overnight retreat joined by young and enthusiastic researchers both from neurology and oncology fields should provide precious opportunities for international students preferentially admitted to this program to build relationships with other researchers and to present their research outcomes.

(4) Series of systematic course works: "Translational Research Course, Cancer Science Course and Basic Science Course"

The Translational Research Course on clinical trials and pharmaceutical development is scheduled for February to March in 2010 as in 2009. In April 2010, the Cancer Science Course will start. As of May 2009, about 70% of the course is provided in English. We also have a plan to open the Basic Science Course, which is significantly important in conducting interdisciplinary research covering a variety of fields such as

bioinformatics, bio-imaging, protein conformation study, systems biology, proteomics and biostatistics (See an attached list of curriculum for detailed information). All these lectures are mandatory for students who are required to complete the requisite number of units.

(5) Progress report meetings

Progress report meetings are held monthly (about two hours in the early evening). Three young researchers selected from basic medicine laboratories and clinical laboratories make a presentation on the background of their research, the reason why they have chosen the topic of their research, and the progress of their research. When international students made their presentations in a meeting, English is used in their presentations as well as in question and answer sessions. While meetings are usually held in a meeting room of the Graduate School of Medicine, located on the premises of Nagoya University Hospital, venues vary according to topics. When the topic is oncology, for example, the meeting is held at Aichi Cancer Center and we request young researchers of the Center to make presentations with the aim of promoting interchange between different facilities. When the topic is neurology, the meeting is held at the National Center for Geriatrics and Gerontology or Research Institute of Environmental Medicine of Nagoya University on a different campus with the aim of stimulating interchange with these facilities. Progress report meetings thus provide international students preferentially admitted to this program with opportunities for interdisciplinary learning and interchange with other researchers.

(6) Basic training (hands-on-learning programs)

The Nagoya University Graduate School of Medicine has utilized a hands-on-learning system named "basic training" for a number of years. A faculty member of each laboratory provides a lecture on the concepts, development backgrounds and methods of various kinds of experiments to graduate students at his/her laboratory or a seminar room. The system allows graduate students to receive a lecture on the concepts, development backgrounds and methods of various kinds of experiments from a faculty member of each laboratory on a day designated by him/her at the laboratory or a seminar room. Following the explanation, the participants, the number of which is limited to less than 20 graduate students per lecture, are provided with an opportunity to conduct experiments by themselves to acquire the necessary skills. Some lectures may take more than one day. A wide variety of courses, including methods for anatomical and histological experiments including imaging, cell culture methods, electrophysiological techniques, genetic transformation experiments and relevant basic procedures, biochemical experimental techniques, pharmacological experimental techniques, statistical analytical techniques, and animal experimental techniques including basic surgical procedures, are available for students to select from (about 60 courses per academic year; see attached curriculum outline for detailed information). Graduate students are required to complete four of these courses. Efforts have been made to provide lectures in English for the benefit of international students and it has now been decided to make English the official language for these courses from the academic year starting April 2009, ensuring opportunities for international students preferentially admitted to this program to become familiar with various kinds of laboratory techniques and procedures.

(7) Special Lectures on Medical Science

Graduate students are encouraged to take special lectures (60 to 90 minutes) on medical science occasionally organized by laboratories. During the last three years, some 130 lectures were held annually and about 14% (about 18 lectures per year) of them were provided in English by foreign lecturers. Graduate students are required to complete at least 10 of these lectures to finish the course. To enable international students to meet this requirement, more than enough lectures have been provided in English. All laboratories understand well that much more efforts should be made to increase the number of lectures provided in English even by Japanese invited speakers so as to increase opportunities for international students to obtain more information and interchange with other researchers.

<Doctoral degree assessment>

International students are required to be formally admitted by Nagoya University Graduate School of Medicine before being accepted by this program. After being enrolled in this program, international students must complete the requirements for mandatory courses and the doctoral degree as required by the graduate school. It generally takes four years to complete the doctoral program. According to their achievement, it is also possible for them to receive their doctoral degree in three years. Application documents and the presentation for the doctoral degree assessment in English have been accepted since more than a decade ago in order not to cause inconvenience to international students preferentially admitted to this program. While academic advisors and staff of each student's laboratory are mainly responsible for assisting the student in preparing his/her doctoral dissertation, academic assistance programs offered by other sources than the laboratory also serve as helpful resources. As stated above, students are provided with various kinds of opportunities for making presentations on their research and receiving other intellectual training. This well-established system that involves the entire graduate school community is available to assist students in preparing their doctoral dissertation.

3. Language used

At their laboratories, international students are provided with information in English on their assignments and explanations of laboratory equipment, facilities and reagents. Discussions that international students participated in are also held in English. In addition, as stated in "2. Educational and instructional systems," efforts have been and will continue to be made to make English an official language for various academic occasions, both intramurally and extramurally, including systematic coursework, the retreat program, the basic training, special lectures on medical science, and the doctoral degree assessment. Through these efforts, learning and research environments for international students are being improved. These efforts have also contributed significantly to raising Japanese students' awareness of global issues, promoting communications with international students, and building a stronger relationship between them for future opportunities.