Course Number	06022

2006「The International Priority Graduate Programs (PGP)」

～Advanced Graduate Courses for International Students～

【1. Profile of the University】

①University Department	Tokyo Institute of Technology Graduate School of Information Science and Engineering			
②President	AIZAWA　Masuo			
③Address (Headquarters)	2-12-1 Ookayama, Meguro-ku, Tokyo 152-8550, Japan			
④Contact	Division	Head, International Student Division		
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	TEL/FAX Number	+81-3-5734-3027, 7667 / +81-3-5734-3677		
⑤Web-Address	http://www.titech.ac.jp			
⑥Enrollment (only Graduate School)	667　(include MEXT's Scholarship Students:　294　)			

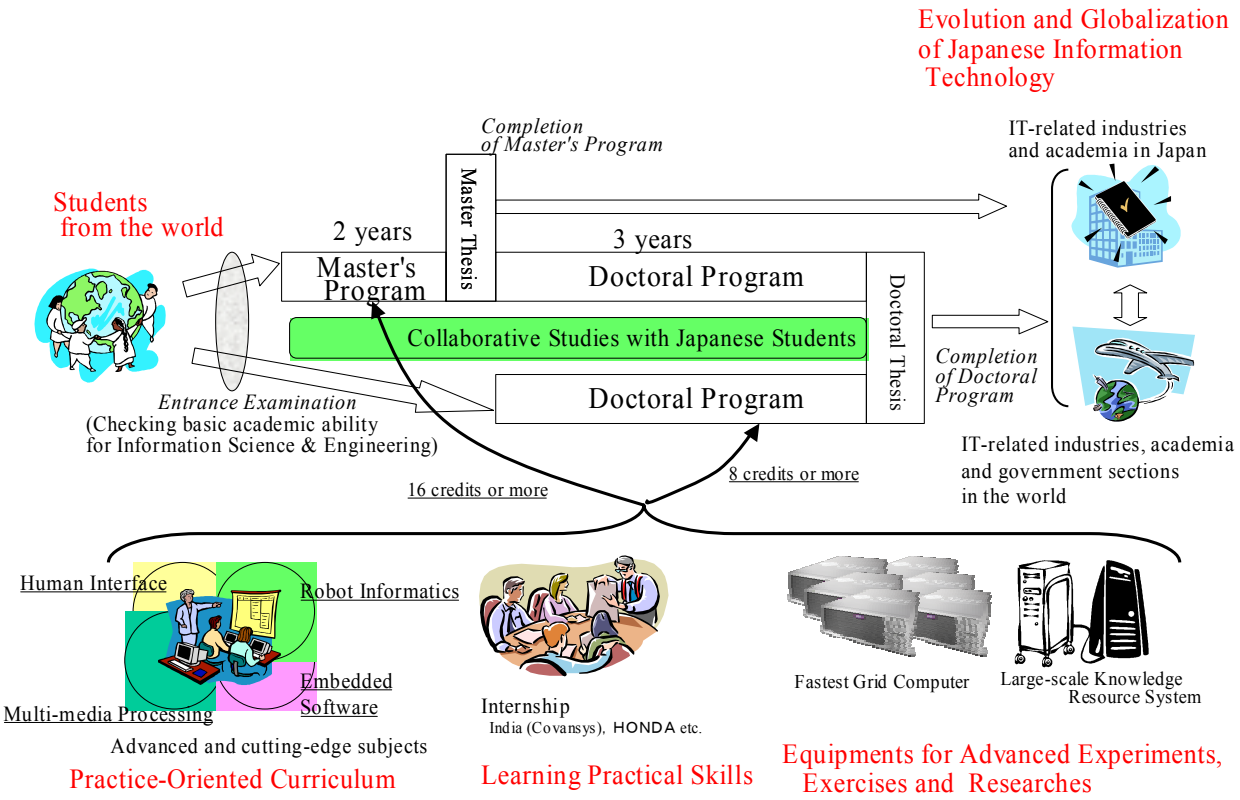
【2. Outline of the Course】

①Course	Education Program of Japanese Advanced Information Technology
②Degree	Master's Degree (2 years) and Doctoral Degree (3 years)
③Graduate Course, Department	Graduate School of Information Science and Engineering, Department of Computer Science
	(Address) 2-12-1 Ookayama, Meguro-ku, Tokyo 152-8550, Japan
④Collaboration (Universities, Graduate courses, Departments)	Tokyo Institute of Technology, Graduate School of Information Science and Engineering, Department of Mechanical and Environmental Informatics
⑤Quota	Master 4 + Doctor 6(include MEXT's Scholarship Students:Master 2 + Doctor 5) (include Japanese : 0　)
⑥Faculties	34　(Full-time(only for this course):29 Full-time(at the department offering this course): 2 Parttime: 3　)
⑦Representative of the Course	Job Title Graduate School of Information Science and Engineering, Professor
	Name　TAKAHASHI Yukio

【3. Contents of the Course】

Outline

Japan is a world leader in both research and practical application in many areas of information science & technology including embedded software, multi-media processing, human interface and robot informatics such as consumer electronics, computer games and industrial intelligent robotics. Japan and the rest of the world have very high expectations of Japanese universities in educating industrial and research engineers in these cutting-edge fields. The aim of this program is to offer enrollment in Master's and Doctoral program to overseas students qualified in information science & engineering subjects, and to educate them to engineering, research and teaching leaders who will actively contribute to the evolution and globalization of these advanced Japanese information-technologies. This program includes practice oriented courses in these areas. Students will be trained using Japan's most advanced computing environments, and will also be able to participate in industrial internships.



Contents

*** Education program focused on Japan's cutting edge information technology**

This program focuses on the four disciplines of Japan's most cutting-edge academic and industrial research fields in information sciences; i.e., embedded software, multi-media processing, human interface, and robot informatics. The aim of this program is to foster engineering, research, and teaching leaders who will actively contribute to information sciences.

*** Confers master's and doctoral degrees**

In this program, we seek master's and doctoral students. Specifically, prospective master's students are expected to continue towards the doctoral degree under this program. In transition from the master's program to the doctoral program, the students' ability to conduct research needs to be ensured through master's theses and/or other academic activities.

*** Support for the students who has yet-to-be-learned basic subjects in information sciences**

This program expects students to have learned basic subjects of information science such as hardware, software, information mathematics, at the time of initial enrollment. Nonetheless, we will assist students who have yet to be learned these subjects by arranging supplementary

lectures and special seminars.

*** Practice-Oriented Program**

It is essential to acquire practical skills for the development of software in the above four disciplines. In the lectures we spare significant amount of time on computer exercises. Furthermore, we facilitate the students acquiring high practical skills through the courses of "Seminars" and "Special Experiments" by doing projects with other Japanese students in an interactive way. In these projects, students are allowed to use the Tokyo Tech's state-of-the-art facilities such as the Large-scale Knowledge Resource System(developed under the 21st Century COE program), which contains massive amount of multimedia contents, and the Japan's fastest grid computing system. Furthermore, for practical training purposes we also provide opportunities for the students to participate in industrial internships so that they can experience projects of software development in the software industry and robot development at HONDA Research Institute.

*** Four areas of the program**

We categorize the courses of this program into the four disciplines, i.e., multi-media processing, human interface, embedded software, and robot informatics, so that one can focus on one of the four disciplines to go through both basic and advanced topics in the specified discipline by the student. The four disciplines and their course names are listed below. Even though students are encouraged to focus on one of the disciplines, it is possible to take courses from two or more disciplines according to the students' areas of interest. For example, if a student is interested in humanoid technology, then he/she can take courses from both disciplines of human interface and robot informatics. Students can also take courses other than the courses listed below in consultation with their academic advisors.

1. Multi-media processing discipline

Advanced Artificial Intelligence, Advanced Coding Theory, Advanced Data Engineering, Pattern Information Processing, Computer Graphics, Speech Information Processing, Foundations of Computing Environments, Advanced Data Engineering, Bio-instrumentation

2. Human interface discipline

Advanced Artificial Intelligence, Machine Learning, Advanced Data Analysis, Pattern Information Processing, Computer Graphics, Human Interface, Speech Information Processing, Advanced Data Engineering, Bio-instrumentation, Neural Interface

3. Embedded software discipline

Concurrent Theory, Mathematical Theory of Programs, Practice of Software Development, Foundations of Computing Environments, Advanced Data Engineering, Advanced Artificial Intelligence, Advanced Coding Theory, Advanced Data Analysis, Pattern Information Processing, Linear Systems and Control, Mathematical Processing of Measurement Information, Mechano-Informatics Project

4. Robot informatics discipline

Linear Systems and Control, Control Theory for Robot Intelligence, Nonlinear and Adaptive Control, Advanced Artificial Intelligence, Machine Learning, Speech Information Processing, Advanced Course of Bio-Robotics, Neural Interface, Mechano-Informatics Project, Advanced Course of Inverse Problems, Mechano-Informatics Internship, Pattern Information Processing

*** The official language of this program is English.**

***Follow-up System after Graduation**

We provide assistance for the students in the case where one seeks job opportunities related to the above four areas in Japanese companies by using the existing job placement system for Japanese students at Tokyo Tech.