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**kcg.edu** 京都情報大学院大学  
THE UNIVERSITY OF INFORMATICS The Kyoto College of Graduate Studies for Informatics

Japan's first IT professional graduate school



# The Kyoto College of Graduate Studies for Informatics (KCGI)

◆ **We offer two fields of concentration: Informatics and Management Studies**

For those aiming for senior executive positions, such as Chief Information Officer (CIO) and Project Manager.

◆ **We accept students from a wide range of fields, including both humanities and sciences**

Even computer novices can enroll at KCGI. Learn according to your starting level.

◆ **With programs such as the long-term study system, we support continuing education for working professionals**

KCGI supports diverse ways of attending classes. In addition to daytime classes on weekdays, KCGI offers options such as evening and Saturday classes as well as e-learning. With programs such as the long-term study system, which extends the period of study to three or even four years with two years worth of tuition, we support students who wish to study while they continue to work.

◆ **KCGI accepts applications in a wide range of fields of IT (ICT)**

Of the wide range of knowledge related to IT, KCGI has nine fields of concentration that are of particular interest to the business world in which IT-related knowledge and skills are in high demand. KCGI enables students to learn the diverse knowledge and skills that society expects of an IT professional. We also offer courses on IT (ICT) applications sought in a wide range of industrial fields.

◆ **We've opened satellite schools in Sapporo and Tokyo. And we're still expanding, in Japan and overseas**

Students can attend classes and study at each satellite school. We plan on opening further satellite schools in a number of regions, including overseas.

◆ **Faculty with a wealth of real-world experience**

Many of our instructors continue to serve on the forefront of business. Some are CIOs at major companies; others are active on the cutting edge of the content business.

◆ **Large numbers of KCGI students have passed the SAP ERP Certified Consultant exam**

Through attentive one-on-one instruction, we support students' acquisition of high-level qualifications. Upon gaining the qualifications, many students are hired by or transfer to major corporations.

◆ **Many classes are offered bilingually or in English**

KCGI offers many classes in English and others in languages other than Japanese and English. It is possible to earn a degree taking classes in English only.

◆ **We participate in global content events**

Every year KCGI exhibits at Japan Expo, a general exposition on Japanese culture held in France. We also co-sponsor Kyoto International Manga Anime Fair ("Kyomafu"), a trade fair for all things related to manga and anime.

◆ **KCGI sits on the secretariat of the Kyoto Manga and Anime Society (KMAS)**

We've established academic associations in a wide range of genres related to IT (ICT). Through these associations, we're pursuing R&D and building networks.

◆ **KCGI is proud to be the administrator of the new top-level domain indicating Kyoto, .kyoto, which we will use to showcase the Kyoto brand worldwide**

With support from the government of Kyoto Prefecture, and with the permission of the global domain administrator, KCGI has become the world's only educational institution to administer and operate a geographic-name-based top-level domain.

First professional IT graduate school to be certified by the Ministry of Education, Culture, Sports, Science and Technology (MEXT)

## No. 1 & the Only One! 京都情報大学院大学

### School Philosophy

The objective of our school is to train highly-qualified information technology professionals with strong practical knowledge of the current business practices, a solid theoretical background, and a creative and innovative spirit which will enable them to meet the demands of society and to be responsible for the current and future generation.

### KCGI's Mission and Purpose

To meet the need for high level and diverse human resources in our IT society and, furthermore, to contribute to the realization of a high level information society and the development of the economy through the provision of high level IT professionals who possess extensive knowledge and high level skills beyond what is conventional and who are also internationally minded in the age of ubiquitous computing. Our purpose is to adapt to developments in information and related technologies and provide education on theory and practical technology in academic fields related to science, technology, and business administration in the training of high level professionals.

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The Kyoto College of Graduate Studies for Informatics

### Admission Policies

The IT/ICT\* industry is an integrated field of both information-related and management-related fields, and its targets are complex and diverse. Consequently, the IT industry's needs for promising talents are increasingly diversifying more than ever before. To date, it was not possible to satisfy Japan industry's diverse talent supply needs with the existing Japanese educational system, being solely dependent on developing engineering undergraduate degree students at engineering-related research graduate schools. Moving forward, in order to further develop Japanese industry and economy, it is important to train people of diverse backgrounds, by all means, as highly specialized professionals in the IT/ICT industry.

From these perspectives, our school has a policy to widely accept as many students of diverse background as possible without specifying their undergraduate degrees.

- 1) People who have the foundational academic ability to learn specialized knowledge at our school;
- 2) People who have a desire to learn new things, think on their own, and create something new without being bound by established concepts; and
- 3) People who have a will to collaborate with others around them and solve problems through communication.

\*ICT: Information and Communication Technology



# The KCGI Education



**Rector, Board Chairman and Professor**  
The University of Informatics  
The Kyoto College of Graduate Studies for Informatics  
Kyoto Computer Gakuin  
Kyoto Computer Gakuin Automobile School

## Wataru Hasegawa 長谷川 亘

Bachelor of Arts, Waseda University  
Master of Education, Master of Arts, Columbia University, USA  
Chairman, Kyoto Prefecture Information Industries Association  
Trustee & Chairman, All Nippon Information Industry Association Federation (ANIA)  
Founder, Information Technology Federation of Japan (IT Renmei)  
Representative Director & Prime Vice Chairman, Japan Federation of IT Associations  
Chair, Information Processing Society of Japan (IPSJ)  
Chair, Japan Massive Open Online Education Promotion Council (JMOOC)  
Vice Chair and Member of Management Planning Committee, IT Coordinators Association (ITCA)  
Member, Personnel Training Council  
Member, IT Security Slogan, Poster and Four-panel Manga Contest Examining Committee IPA  
Member, Management Committee, Advanced Polytech Center  
Japan Organization for Employment of the Elderly, Persons with Disabilities and Job Seekers  
Advisor and Chair, Nippon Applied Informatics Society (NAIS)  
Kingdom of Thailand Ministry of Education Vice Minister's Award (twice)  
Republic of Ghana Ministry of Education Award  
Qualified as an Educational Administrator in the State of New York, USA  
Visiting professor, Tianjin University of Science & Technology, China  
Policy advisory committee, JDC, Jeju Free International City Development Center  
Professor Emeritus, Jeju National University, Jeju, South Korea

Courses: Leadership Theory, Honors Master Thesis

The Kyoto College of Graduate Studies for Informatics (KCGI) is Japan's first IT professional graduate school. KCGI's parent organization, Kyoto Computer Gakuin (KCG), was Japan's first private computer education institution. KCG was established as a private school by Shigeo Hasegawa and Yasuko Hasegawa under their unique, forward-looking philosophy. KCG has been engaged in computer education since its establishment in 1963. During that time, not only high school graduates but also many graduates of four year universities have enrolled and studied at this school. At the time of the school's founding, only research-oriented graduate schools existed in Japan. Many of the students who enrolled after graduating from university chose KCG after searching for an institute of higher education directly connected to the practical side of computers. Even though KCG was organized under the vocational school system, it holds a role in Japanese society as an educational institution for university graduates and has also served the function of a kind of occupational and practical graduate school.

Based on this state of affairs and history, in 1998 KCG established a joint program with graduate programs (including Information Sciences and Technologies, Computer Science, and others) at the Rochester Institute of Technology in the United States and has since implemented a professional graduate school curriculum oriented towards practical learning. This collaboration between a Japanese vocational school and American graduate school programs was both the first of its kind in Japan and ground-breaking.

It was perhaps inevitable that, with well-established professionals at its core, Kyoto Computer Gakuin (KCG) would be founded and developed as a uniquely professional graduate school for IT under the new professional graduate school system. The Kyoto College of Graduate Studies for Informatics (KCGI) was founded with generous endorsement and cooperation from related parties in the financial and educational fields, the latter including faculty at Rochester Institute of Technology and Columbia University. In April of 2004, the first year in which the new system was adopted, KCGI opened as Japan's first and only IT professional graduate school.

The founding philosophy of KCGI is "to cultivate specialists in applied information technology who possess creativity and high level practical abilities which will meet the needs of society, support the present age, and lead us into the next generation." Combining IT education with international business education, KCGI created a program to cultivate engineers and particularly CIOs

specializing in web business (e-business), based on the revised edition of the Information Systems (IS) master's program curriculum of the Association for Computing Machinery (ACM). KCGI's mission and purpose is to serve the need for diverse and skilled individuals in today's IT society by cultivating international professionals who possess exceptional skill levels and wide-ranging knowledge. It is our belief that these efforts will lead to economic development and the realization of an advanced IT society, as well as the development of IT and related technologies. In this way, we work to promote education on theory and practical technology in academic fields related to science, technology, and business management. Such achievements will in turn lead to the cultivation of future generations of highly skilled IT professionals.

Until the foundation of KCGI, major programs concerning web business (e-business) at the undergraduate and graduate-school level were virtually non-existent in Japan. These majors were treated as merely a sub-field in traditional major programs such as business management, industrial engineering technology and majors related to information. They were merely researched and taught as part of a systematic and comprehensive major or as part of a major field.

What distinguishes KCGI is that, as an IT professional graduate school in the broader sense of IT, we aim to be a world-class professional school that also focuses on the cultivation of leadership abilities. Unlike many universities, we are not a "vertically divided single field" computer science graduate school, nor are we an informatics and mathematics graduate school. While we share many similarities with those institutions, we are a different genre of graduate school. In addition to curriculum designs and an advisory teacher system based on a pedagogical point of view, KCGI aims to provide a well-rounded education system integrating a wide range of elements and policies rarely seen in Japanese universities. These include learner-oriented instructional design, an education system with an open and horizontal division of labor, and periodic evaluations of learning outcomes.

Furthermore, KCGI is also focused on the cultivation of international leaders and personnel equipped with both IT and management skills, who can put their abilities to work throughout Asia and the world. At KCGI, we actively accept students from around the world, as part of our aim since our establishment to be the number one IT professional school in Asia.

Today IT is indispensable in our daily lives and in industry. Diversified into numerous related fields, IT addresses a vast range of societal needs. At KCGI, students

gain a general grounding in IT. The curriculum is continually revised and updated to ensure that students can apply what they have learned and play an active role in their chosen fields. Students who complete their courses at KCGI possess the strong knowledge and skills and broad perspective necessary to play an active role in any of a wide range of fields in Japan or overseas.

KCGI has also established satellite campuses in Sapporo and Tokyo. These satellite campuses are connected to the Main Campus in Kyoto via an e-learning system, enabling students to receive cutting-edge IT professional education while studying at either satellite campus. Courses are taken in real time, enabling students to ask questions to professors directly via camera. These courses are also recorded, so students can view courses stored on our servers from home. Transcending the boundaries of space and time, students can receive a sophisticated professional education anywhere, anytime. KCGI also holds close connections with higher educational institutions around the world, including those in the United States, China and South Korea. KCGI is actively developing its educational operations while continuing to expand its international network.

In addition, KCGI is independently building out a comprehensive network of universities and other educational institutions for partnership and exchange, in the United States, China, South Korea and other countries worldwide. Already KCGI students can avail themselves of partnerships with over 100 institutes of higher learning around the world. While deepening existing ties, KCGI is actively developing its educational business. At its inception, KCGI had admission capacity of just 80 students (total capacity of 160). Since April 2025, admission capacity is 1,000 (total capacity of 1,880), representing a approximately 12-fold expansion. This admission capacity is one of the highest for any informatics graduate school in Japan.

Amidst the wrenching changes unfolding in the world today, KCGI is working hard to develop sophisticated IT professionals, guided by our founding philosophy and our established mission and purpose. I eagerly await the entrance of ambitious students such as yourself.

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The Kyoto College of Graduate Studies for Informatics

# The rise of AI and social change: Become a professional who can face and handle this new technology properly!



President, The Kyoto College of Graduate Studies for Informatics

## Yoichi Terashita 寺下 陽一

Bachelor of Science from Kyoto University  
 Doctor of Philosophy from the University of Iowa, USA  
 Senior Faculty Member, KCG  
 Professor emeritus, Kanazawa Institute of Technology  
 Former JICA (Japan International Cooperation Agency)  
 Former Principal of KCG, Rakuohku Campus  
 Principal of KCG, Kyoto Ekimae Campus

Courses: Honors Master Thesis

In his latest book, *Nexus*, Yuval Noah Harari presents a detailed analysis from anthropological, historical, sociological, and psychological perspectives, arguing that the impact of AI can, if we are not careful, be more of a threat to human society than a benefit. According to Yuval Noah Harari, AI technology has already begun to have negative effects on society, while at the same time, its capabilities cannot be stopped. He raises questions about how human society should deal with AI from political and sociological perspectives.

Needless to say, AI can be considered one of the ultimate applications of information technology. However, what makes it significantly different from other applications is the scale and quality of the impact that AI will have on human society, he says. The Kyoto College of Graduate Studies for Informatics has a wide range of applied information fields, including artificial intelligence, data science, web system development, network management, global entrepreneurship, ERP (enterprise resource planning), IT manga and anime, IT tourism and IT Entertainment. In each of these fields, how to utilize AI is a topic that requires discussion. We at the KCG Group are carefully considering what philosophy, methods, and curricula we should be using to teach various AI-related technologies and theories. As a rapidly growing university, KCGI invites faculty from all over the world, to provide IT education through a curriculum that incorporates cutting-edge knowledge from their respective fields. We consider it our important mission to send out graduates who can appropriately deal with the future of AI.

AI is one of the developments resulting from traditional IT education. In the business field, AI handles huge amounts of data, processes and analyzes it, and suggests optimal solutions at a speed far beyond conventional human operations. In the field of medicine, AI now enables high-accuracy precise diagnoses through image analysis. In other words, AI is excellent at tasks that correspond to the left-brain functions of humans.

On the other hand, AI (or information technology in general) is completely powerless when it comes to functions that correspond to the human right-brain (consciousness), such as emotions, ethics, and love. For example, AI cannot grasp and process the emotions felt

when listening to music, or judge whether something is morally right or wrong. This is an important and serious issue when considering the future development of AI technology. If this issue is not resolved, we humans will not be able to use AI with peace of mind. It is quite possible that human society could be destroyed by AI losing its control. To avoid this nightmare, it is essential to give AI a self-correction function, to judge whether the conclusions AI reaches are ethically correct or not, and to correct if they are not. However, this has not yet been realized.

Future IT engineers must not be people who are entirely devoted to technology. They must continue to work as innovative engineers, while constantly thinking about how the development of information technology will affect human society, and always reflect on whether the new technology (AI) they are developing can contribute to the welfare of society.

Conversely, some people may think that application of AI technology on society is the responsibility of its users (policymakers, corporate executives, etc.), not engineers. However, this is incorrect. This is because engineers are the ones who are most familiar with the content of the technology, not politicians or executives. The role of engineers in AI development will only become more important from now on.

It was 80 years ago when the atomic bomb was invented, actually used, and caused an unprecedented tragedy. The process of developing the atomic bomb (the so-called Manhattan Project) is depicted in the film *Oppenheimer*, which highlights the severe conflict between engineers and policymakers. It is sad to say that even now, 80 years later, nuclear technology is still not properly managed, and it can even be said that it is moving in a negative direction. This is difficult to understand. Is it the fault of the engineers? The policymakers? Or is it the failure of human society as a whole? I hope that students studying at our university will always think about these issues as they strive to master information technology and enter society as highly skilled IT professionals with critical thinking skills.

### Color of KCG Group

**keg.edu**  
 The Kyoto College of Graduate Studies for Informatics

**KCG Red**  
 School color of The Kyoto College of Graduate Studies for Informatics (KCGI)

Besides the school management, Shigeo Hasegawa, founder of KCG group, studied again in his later years at Harvard University to tackle studies he was unable to pursue when he was young. He rented an apartment in Boston and attended a class of literature and philosophy with young students. Based on the crimson color, which is the school color of Harvard University, school color of KCGI is established as KCG Red, as a color contrasting to KCG Blue. This expresses attitude to challenge and learn a new thing enterprisingly regardless of age or sex.

**keg.edu**  
 Kyoto Computer Gakuin Automobile School

**KCG Orange**  
 School color of Kyoto Computer Gakuin Automobile School (KCGM)

The Kyoto Computer Gakuin Automobile School fosters automotive mechanics with advanced techniques and knowledge in IT and networking applicable to next-generation automotive technologies. For KCGM, a new member of the KCG Group joining in 2013, we designated orange as its school color to express its new vigor brought to the KCG Group.

**keg.edu**  
 Kyoto Computer Gakuin

**KCG Blue**  
 School color of Kyoto Computer Gakuin (KCG) and KCG Group

Because all the original members of KCG in its establishment were graduates and graduate students of Kyoto University, the color of KCG and KCG Group is selected on the basis of the Kyoto University's school color, the dark blue. The color has begun to be used from around 1970, we defined the color as "KCG Blue" on the 35th anniversary in 1998.

**keg.edu**  
 Kyoto Japanese Language Training Center

**KCG Green**  
 School color of Kyoto Japanese Language Training Center (KJLTC)

For the international students, KJLTC is the first entrance of KCG group. KJLTC is a Japanese Language educational facility, recognized by the Minister of Justice, and assigned as a preparatory education curriculum by Ministry of Education, Culture, Sports, Science and Technology. From the imagery of the green earth of seven continents, a green color is selected as the school color, as a color contrasting to KCG Blue and KCG Red mentioned above.



# Features of KCGI

## Truly master practical skills useful in society.

### ■ Curriculum design adapted to the needs of industry and advances in IT

At KCGI, curricula, program designs, and instructional designs are created with advice from specialists both inside and outside the school in order to promote education adapted to the needs of industry. In addition, world-class, cutting-edge IT education curricula are imported and jointly developed based on our collaboration with the Rochester Institute of Technology in the United States in order to adapt to the rapid changes in IT (ICT).

### ■ Education based on the world's most advanced educational theory

Online education made its debut in the mid-1990s, when the internet began to spread rapidly in the United States. Since that time, a great deal of research has been conducted on the differences in educational results between e-learning and in-person classes. Some research has shown that, for highly motivated students, the educational results are broadly the same, the difference between online and in-person learning amounting to no more than a difference in communication method. KCGI boasts faculty who have extensive experience in advanced research in e-learning. For example, as a graduate student at Columbia University, the world's leading beacon of educational studies, Wataru Hasegawa was a member of a select project team tasked with examining whether the Ivy League school should set up an e-learning program for 800 students. KCGI not only offers both online and in-person classes but also designs and operates classes based on educational theory at the world's highest and most advanced levels.

### ■ Thoroughly practice-based curriculum composition

In order to cultivate human resources who possess both IT (ICT) and management skills, KCGI takes into consideration students' ability to take many classes not only in the field of IT but also subjects related to business such

as management and economics. In their final year, students at KCGI plan and implement a master project in place of a master's thesis, acquiring the high level skills needed to establish their careers.

## Studying IT (ICT) and Management and Applying it in Various Industries

### ■ Cultivating professionals capable of operating in multiple fields, such as IT and management

Talented individuals possessing both IT (ICT) skills, with web technology as a mainstay, and management skills, such as management strategy creation, are in demand in the modern business scene. KCGI cultivates professionals who understand multiple specialized fields, such as information and management. Curricula are organized so that students can study a good balance of information and management courses as is appropriate to their individual backgrounds.

### ■ Through fields of specialization and industry courses, KCGI teaches IT (ICT) for application in a wide range of fields

Drawing on the vast range of knowledge on IT, KCGI prepares students with a wide variety of specialized knowledge needed for specific fields. For this purpose, we have established nine fields of specialization: Artificial Intelligence(AI), Data Science, Web Systems Development, Network Administration, Global Entrepreneurship, ERP, IT Manga and Anime, IT Tourism, and IT Entertainment. In addition, KCGI identifies and teaches classes in a number of industry courses, to develop professionals who can apply and use IT in these fields. These industry courses are Finance, Agriculture, Marine, Healthcare & Medical, and Education.

The KCGI curriculum is focused on practical application with thorough grounding in the knowledge and technologies of a diverse range of fields. We aim to cultivate people who can deliver the solutions needed in each field.

### ■ Appointment of numerous instructors with practical experience in corporate and other IT strategy development

In order to cultivate professionals, KCGI appoints many practically experienced faculty such as instructors with experience working as CIOs at major companies. Our teaching staff cultivate students' practical skills through courses based on their actual experience. Students acquire comprehensive professional skills while increasing their understanding of the latest theories and technologies directly connected to practical usage.

## Change career paths and flourish in the field of IT.

### ■ Students from a wide range of fields, whether in the humanities or the sciences, can enroll

One of the objectives of KCGI is to develop advanced IT professionals with a wide range of backgrounds. We recruit a diverse range of entrants from numerous fields in the humanities as well as the sciences, without limiting the departments or major areas of study from which they are expected to have graduated. KCGI supports students from a wide array of backgrounds, offering elective courses appropriate to the existing knowledge, skills, and needs of students. To enable working adults to continue studying while employed, KCGI provides support with a diverse range of learning options. We proudly create opportunities to change career paths, something which has traditionally not been properly provided by graduate schools in Japan.

### ■ Take classes appropriate to the knowledge you bring to KCGI

Students vary in skill levels in IT study at KCGI, from humanities graduates with virtually no knowledge of computers to working adults flourishing as SEs in the IT industry. KCGI offers the optimum course pattern for each individual student based on their existing skills in IT and future goals. This makes it possible even for students without a prior background in the field to comfortably reach their goals in stages. In a typical Japanese graduate school, students complete 32 units to earn a master's degree. In contrast, at KCGI a master's degree requires completion of 44 units—12 more than at a conventional graduate school. Why is this? It's because at KCGI, our goal is to develop people whose specialized knowledge of their chosen field is not only deep but broad, not only thoroughly versed in ICT skills and knowledge but also capable of putting them to practical use.

## We aim for an active role on the global stage.

### ■ Courses conducted by leaders in the field of IT from around the world

IT business is a field developing globally and across national boundaries. KCGI invites top class professors



from regions around the world including North America and Asia to help students acquire an international perspective. KCGI concludes scholarly exchange agreements and business collaborations with universities around the world, including the Rochester Institute of Technology in the United States and the Graduate School of Information Security at Korea University, which is one of the top programs in the world in the field of information security. KCGI is also focused on the development of international relations, including engaging in joint research and international symposiums.

### ■ Overseas Study and Overseas Dispatch Classes

KCGI partners with numerous colleges and universities in a wide range of countries, including the Rochester Institute of Technology in Rochester, NY, USA. KCGI actively sends students to study abroad at these partner institutions and takes part in international academic conferences. We also make active use of overseas internship programs, for example providing opportunities to participate as teaching assistants (TAs) in classes at partner schools overseas.

## Harness your studies to flourish in society.

### ■ Making your ideal job a reality with thorough individual guidance

KCGI aims to enable all students to find jobs when they graduate. Instructors in charge leverage their experience and personal networks in industrial and other communities on students' behalf. Through one-on-one consultation with students, instructors work to help students find their dream careers. In addition, KCGI provides a wide variety of support for students looking to start their own company, including providing the knowhow needed to establish, manage and operate a business.

### ■ Cultivation of business networks among graduates

Each year KCGI produces numerous and highly diverse graduates focused on the keyword of IT, and KCGI also concentrates on cultivating a business network composed of these graduates. KCGI establishes numerous opportunities to engage in group work during students' tenure with the goal that students will harness each other's unique skills after graduation and cooperate in business development and expansion.





# We train students to become global players through a full roster of classes in English Mode.

KCGI offers many lectures in “English mode,” so that students can, attend classes and earn a KCGI masters degree entirely in English. Some of these lectures are taught by top-level instructors invited from overseas. Currently KCGI hosts overseas students from 15 countries and regions (including students who completed their courses in March 2022), many of whom choose to attend lectures in English. This is a major advantage of a KCGI education.

This option is not just for foreign students. Japanese students can also attend lectures in English, provided their English proficiency has reached the required level. KCGI offers a great chance to its Japanese students to polish their English proficiency while studying ICT, providing them with a diverse international studying environment.

The IT industry demands that people continually absorb the latest information. People who can put useful information to work in development or production are the ones who will grow to become successful business people. The IT field generates new technologies every day, so the ability to catch up on the latest information is vitally important. Of course, many of these leading-edge technologies arrive on Japan’s shores from the United States and other overseas countries and regions, so the information about them is almost always written in English. Engineers from countries whose official language is English vastly outnumber Japanese engineers, so high-quality information and articles are necessarily written in English in most cases. If you can catch up early with the English-language information you need to perform your duties and improve your skills, you will unquestionably find that ability to be a significant advantage in your work.

Students aiming for a career at the pinnacle of their industry, for example at a foreign-affiliated IT company or consulting firm, can use the KCGI advantage, English mode, to good effect.



## Messages from English-Mode Instructors

Professor Izu Matsuo

In a world where technology, society and economies are changing day by day, universities have an important role to play in cultivating global personnel. With proficiency in English, professionalism and an international mindset increasingly in demand, the world needs people who have the curiosity and drive to learn actively and take action.

Speaking personally, I began living overseas when I was a small child. I pursued an education, and later a career, in both Japan and the United States. In the business world, I specialized in sales and marketing with global firms involved in manufacturing and IT. Drawing on that experience, at KCGI I offer business-related lectures in English with a view to serving students’ practical needs. Students gather at KCGI from all over the world. To enable those students to pursue their studies together, I create course content with plenty of opportunities to collaborate on projects and presentations.

KCGI offers a wide range of courses teaching leading-edge, specialized content in both English and Japanese, with lessons that prepare students for exams in qualifications recognized by companies worldwide. Here in Kyoto, a city that garners so much international attention, I hope that you, the leaders of the next generation, will enjoy a fruitful two years, learning from your instructors and making friends from around the world.



## Active Fields

The introduction of IT (ICT) which is of a high level compared to traditional IT in accordance with the increasing sophistication of IT (particularly the diffusion of web business technology) is now a challenge faced by the world of industry. Specifically, there is a movement towards utilizing IT (ICT) not merely as a means of improving business but rather in the creation of high level business strategies. This means the introduction of IT at

the top levels of business management; the human resources involved in this will require both high level knowledge and skills and at the same time high level management sense.

KCGI has created curricula designed to cultivate the high level IT talent required by industry. Graduates of KCGI are expected to work in IT-related occupations such as the following.

### CIO (Chief Information Officer)

As the implementation of IT in companies grows and IT increasingly comes to support the basis of business management, companies are increasingly seeking CIOs who will draft IT strategies and play a part in company management. CIOs are high level professionals who take part in the design of company management strategies, develop information strategies aimed at creating environments which enable the realization of said management strategies, and turn the diverse array of management knowhow possessed by the company into effective information systems.

### System Integration Consultant

Due to a lack of in-house IT talent, the demand for external consultants in promoting information technology in Japanese companies is growing. System integration consultants are high level professionals who provide consulting concerning business system planning in accordance with the management strategies of the client company and possess the skills needed to efficiently implement links between companies which will help them to succeed in today’s fiercely competitive international business environment. As system integration consultants must understand and respond appropriately to client needs, they must have strong IT, management, and communication skills.

### Information Security Consultant

Information networks are indispensable infrastructure to making e-commerce and an IoT a reality. However, the security risks to these networks are also continuing to expand. An Information Security Consultant offers advice and support to customers in formulating information security policies and in securing information assets. To understand the conditions the customer faces, and to respond appropriately to these, an Information Security Consultant requires management and communication abilities.

### Project Manager

As a leader of projects promoting the introduction of IT, the role of the project manager is important. Project managers are high level professionals who consider the effective utilization of internal management resources, possess the ability to comprehensively manage and optimize the same, and introduce the latest information technology as appropriate. As such, project managers must possess extensive knowledge about both IT and business management. In addition, as project managers often participate in cross-department projects involving numerous people of different positions, they also require high level communication and leadership abilities.

### Entrepreneur

An entrepreneur is someone who starts a business from scratch. As the founder of a new business or project, the entrepreneur must have the strong ambition to stick firmly to the founding principles of the company and the leadership to pull the entire organization in the intended direction. The entrepreneur bears heavy responsibility for the execution of the company’s business and must have a solid grasp of the state of the business and issues on the shop floor at all times. For these reasons, excellent management skills are a must.

### Content Production Manager

Content Production Managers oversee project teams in the production of media contents, such as movies, animation and game software. Firstly, a proposal is drafted, then production negotiations are initiated with the company with the cooperation of the team, and a concrete budget is secured. Also, Content Production Managers must plan how they can recover this funding using the finished product, and execute this plan. This requires the capacity to analyze past project performance and current market conditions, and the leadership to organize a team to execute your plan.

### AI Architect

Artificial intelligence (AI) is a key technology for realizing the people-centered society of the future, as represented by Society 5.0. An AI architect is not merely someone who is proficient in machine learning and other AI technologies, but rather an advanced, specialized professional who can put to use skills in analyzing target duties and fields of application and in developing and applying AI systems to solve problems and advance optimization in a wide range of fields. AI architects are expected to play a vital role, as they will be in charge of core duties in building the social systems and running the industrial structures of the future.

### IT Architect

The IT architect is an advanced, specialized professional possessing a deep understanding of IT. The responsibilities of the IT architect encompass the entire series of duties from proposal of an IT strategy and drafting of a grand IT design to solve a management or work problem to IT planning and subsequent advancement and implementation. To the duties of an IT specialist, the IT architect adds a management perspective, examining and proposing common specifications and requirement definitions for system development as well as target states for systems. The IT architect must have the skills to specify the conditions for operating and maintaining a system, based on the overall system orientation and arrangement.

### Data Scientist

The data scientist collects, extracts and analyzes necessary information from the mass of Big Data and uses that information to propose measures aimed at improving the condition of a business. The expansion of Big Data was cited in METI’s *Survey Results on the Latest Trends and Projections in IT Personnel*, suggesting that demand for data scientists is set to climb. In recent years, the beneficial use of Big Data in fields such as agriculture and medicine has been advancing, broadening the fields in which it is applied. In addition to knowledge of marketing and management, data scientists are expected to possess IT skills such as statistical analysis and data mining as well as the ability to think logically based on hypotheses and proving tests.

# Curriculum Policies

Consistent with our mission and goals, we offer a curriculum to train highly specialized professionals who possess both IT/ICT management skills and can actively develop their chosen IT business field.

## 1. The curriculum courses are categorized into the following categories:

- Fields of Concentration – courses that are grouped systematically to deepen knowledge about specific areas of study.
- Industry – courses that are focused on the practical use of technology and skills in a specific industry with business and IT experts using case studies and project based learning.
- Supporting electives – courses that include technology trends, high-level theoretical courses as well as supporting skill courses that complement Concentration and Industry areas.

## 2. Establishment of Course Registration Models and Method

In response to their learning objectives and preferences, students choose one “Concentration”, a set of courses which emphasizes broad and deep expertise from basic foundational knowledge to application and practice in a specific IT related field within a wide range of knowledge. In

addition, the Bespoke Curriculum allows students to select courses that correspond to a wide variety of student needs and their personal goals of study and research.

To expand their learning into professional application, the curriculum also offers Industry courses that emphasize practical application of technology in a wide range of industrial fields. Students apply their knowledge to specific problems as well as create designs and plans in a variety of industries. Industry courses are meant to complement the students main Concentration courses.

## 3. Master Project

Together with coursework, our curriculum is designed to foster students’ practical and applied ability by pursuing their own interest by completing a Master Project under Faculty guidance.

## 4. Responses to Changes

Our curriculum quickly responds to rapid changes in the IT/ICT industry. The school constantly reviews and modifies the curriculum in accordance with Industry and societal changes that are needed for highly skilled professionals in Japan and abroad.

# Diploma Policies

The school confers a Master's degree to individuals who fulfill the following requisites.

1) Full completion of pre-determined coursework within the allotted time period (e.g. 4 semesters)

2) Full completion of pre-determined credits for graduation

The school aspires that the students possess the following attributes:

- a. Acquire and expand on the foundational knowledge to become contributors to their profession.
- b. Apply this knowledge in the students’ chosen field to become highly skilled professionals.

Behave in a high ethical manner to become respected members in their profession.



# Studying at KCGI

## Integrated Programs for the Development of Highly-Qualified Information Technology Professionals

One of the goals of KCGI's School Philosophy is the development and graduation of highly-qualified information technology professionals. To achieve this goal, KCGI establishes integrated curricula, combining a range of course registration models to cater to students’ varying educational objectives with student-driven projects and activities.

### ■ Acquiring Specialization

As a highly-qualified information technology professional, it is unrealistic to expect to cover the entire vast range of knowledge about IT. To enable students to specialize, KCGI identifies a number of particular fields and develops curricula for those fields. These Fields of Concentration enable students to acquire broad and deep knowledge about their chosen fields, ranging from its basics to applied technologies and practical skills.

### ■ Responding to the Needs of Society

Across the gamut of modern industries, the need for applied IT to raise efficiency, gather knowledge and otherwise solve problems is mounting steadily. KCGI is responding to these needs by organizing Industry Courses that enable students to select a field of industry

and practice IT in that field, learning through case studies and by tackling issues.

### ■ Demonstrating Creative and Practical Skills

A highly-qualified information technology professional must be able to apply the knowledge they acquire in each course to practical uses and solutions to real problems. They must be able to plan and design the series of actions to be taken on their own initiative and return the benefits of those solutions to others. To ensure that students acquire the knowledge they need, students pursue a curriculum consisting of a Master Project on any of a wide range of themes as well as Research Projects/Independent Study, under the guidance of a Project Sponsor.

### ■ Professional Orientation

Highly-qualified information technology professionals are expected to fulfill their roles as highly trained professionals capable of solving real problems and delivering practical solutions in actual industrial fields. To this end KCGI encourages students to apply for internships. Internships provide opportunities for hands-on experience that can raise students’ levels of technical proficiency and sharpen their problem-solving skills.

The selection of an instructional model and the assignment of projects and the like are not imposed uniformly on all students. Rather, students can combine a wide range of selections according to their interests and passions and the depth of their studies. KCGI designs curricula that respect students’ freedom to pursue the studies of their choice while ensuring that they discover the knowledge and techniques required of and appropriate to a highly-qualified information technology professional.

## Educational Objectives Graduate School of Applied Informatics Technology Specialization in Web Business Technology

The purpose of this Specialization is to train advanced, specialized professionals who can respond rapidly to developments in IT and related fields; can deploy basic analytical ability backed by a broad perspective, through study and research in the theory of disciplines related

to physics, engineering, management, etc., and their applied technologies; and possess the advanced technological skills required to succeed in professions that require high specialization.

## Educational Goals

For our school to realize its mission and purpose in educating students, we set our educational goals for our web business technology major as stated below.

### 1) Attainment of Fundamental Literacy

Students are expected to learn social and communication skills that serve as foundations to promote business. Students are also expected to understand fundamental technologies such as software and hardware networks that structure IT/ICT.

### 2) Improvement of Planning and Designing Ability

Students are expected to develop abilities: 1) to research widely and analyze the current and future trends of business and its supporting IT/ICT; and 2) to plan and propose a logical approach to pressing corporate and societal challenges. Moreover, students are also expected to develop the ability to design various systems and contents that materialize proposed plans.

### 3) Improvement of Development and Implementation Ability

Students are expected to develop the ability to either personally utilize systems and contents that were planned and designed through the software implementation or offer them to end users. In the process, students are expected to deepen their practical knowledge related to various tools and coding rules that are required to develop and operate these systems and contents.

### 4) Fostering Professional Awareness and Ethics

Students are expected to develop the ability to take charge of business processes responsibly. In order to continuously improve business processes, they are also expected to develop high professional awareness and ethical perspectives. With these two things combined together, we expect students to acquire practical leadership skills and methods to manage organizations.



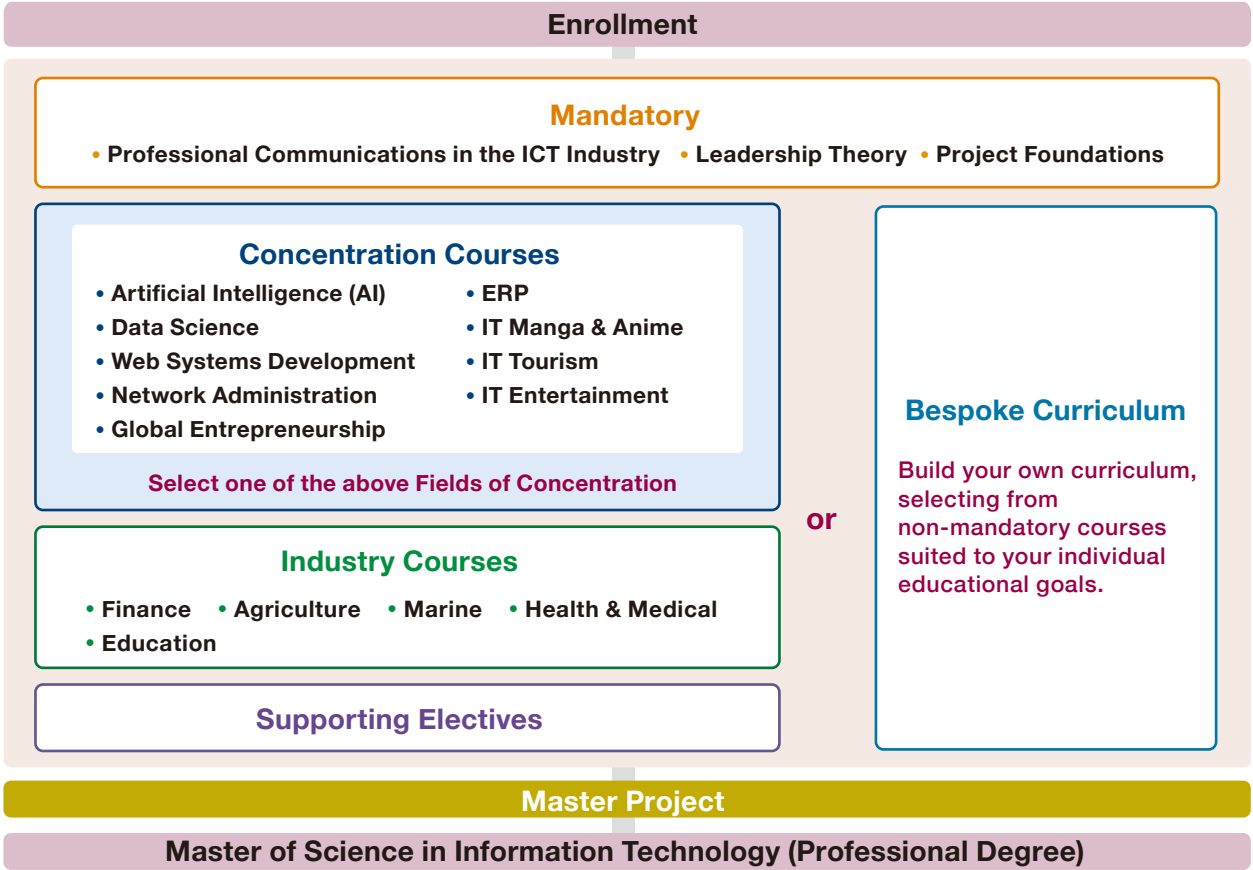
# Curriculum Structure at KCGI

KCGI assembles curricula that provide the basic techniques and knowledge students will need in the ICT field. Mandatory Courses include courses teaching basic skills needed by businesspeople as well as practical skills of use in professional fields. Concentration Courses are courses with diverse content about a particular professional field. Industrial Courses consist of courses related to major fields that are in high demand. Supporting Electives are courses provided with the aim of

developing a broad base of knowledge independent of particular areas of concentration and industries. Mandatory Courses include courses teaching basic skills needed by businesspeople as well as practical skills of use in professional fields. At KCGI, classes are taught by outstanding individuals who are active on the front lines of their respective fields. The courses that comprise each course category reflect the latest industry trends and are updated in a timely manner.

Concentration Courses	<p>Students select a specific, specialized field from among the vast body of IT-related knowledge and deepen their knowledge within that scope. To assist students in acquiring a specialized yet sufficiently broad base of knowledge, courses are grouped into various fields.</p> <ul style="list-style-type: none"><li>• Artificial Intelligence (AI)</li><li>• Data Science</li><li>• Web Systems Development</li><li>• Network Administration</li><li>• Global Entrepreneurship</li><li>• ERP</li><li>• IT Manga &amp; Anime</li><li>• IT Tourism</li><li>• IT Entertainment</li></ul>
Industry Courses	<p>These courses focus on the practical application of professional knowledge and technology in specific fields. The courses are specialized for each industry. Lectures are offered by outstanding individuals active on each industry's front lines.</p> <ul style="list-style-type: none"><li>• Finance</li><li>• Agriculture</li><li>• Marine</li><li>• Health &amp; Medical</li><li>• Education</li></ul>
Supporting Electives	<p>This curriculum consists of courses teaching the basic skills students will need as professionals regardless of industry or field of concentration, such as communication and management, as well as courses covering case studies of leading-edge ICT applications and technological trends. Because it brings together courses from a wide range of perspectives from basic to applied, this curriculum enhances students' breadth of learning.</p>
Mandatory	<p>KCGI accepts students from a diverse range of backgrounds, regardless of the academic department from which they graduated. This open approach provides many professionals with opportunities to change careers, thereby fulfilling a significant social role. For this reason, the mandatory courses are set with the aim of nurturing the basic skills in vigorous and logical communication that are expected of an advanced specialized businessperson, regardless of the student's field of specialization.</p> <ul style="list-style-type: none"><li>• Professional Communications in the ICT Industry</li><li>• Leadership Theory</li><li>• Project Foundations</li><li>• Master Project</li></ul>

## ◆ Flow of courses to be studied from first to final year



## Master Project

Many KCGI instructors have extensive experience in advising students at Kyoto University and other distinguished Japanese universities, or have been active on the front lines of business globally. KCGI students can receive guidance directly from these instructors on their master projects.



### ◆ Overview

Master projects at KCGI are mandatory courses that focus on practical applications and technologies in use in IT, with the objective of leading students in setting, analyzing and solving problems based on their own awareness of issues. In KCGI master projects, students analyze issues and present solutions to them by focusing on specific tools (including platforms, software, services, frameworks and business models), drawing on the specialized knowledge in fields and industries they have acquired in their studies.

Unlike master's theses at conventional graduate schools, which center primarily on research, the master's thesis at KCGI may consist of a written master's thesis or it may consist of discovery of new knowledge or the application of existing tools to a project. Students are free to select their own themes and approaches based on their own preferences

and aspirations.

The master project is the culmination of the student's studies. The aim is to provide students with the opportunity to improve the lives of real communities and people through the practical application of ICT.

### ◆ Methods of Implementation

Students pursue their master projects on their own initiative, under the guidance of a project sponsor. A master project can be a project to apply specialized technology or it can consist of deep-diving academic research. Practice is modeled on Columbia University in the United States, the global pinnacle of the education field. A flexible approach is taken in which students can select any of the following four types of master project, based on the time available to them and the nature of the project.

### Master Report

Type 1

The student chooses one course from his/her field of specialization, tackles a theme related to that course, and completes the report.

### Master Project

Type 2

The student decides on a theme of his/her own free conception, pursuing a project according to his/her own aims and preferences.

### Honors Master Project

Type 3

The student pursues a project with particularly advanced content or an unusually large theme. The student decides the theme himself/herself and spends the time necessary to pursue it.

### Honors Master Thesis

Type 4

This type is for students aiming to produce a master's thesis on the same level as the world's great universities. The student decides the theme himself/herself and spends the particularly extensive time necessary to pursue it.





Nine Fields of Concentration Available for Study at KCGI

Fields of concentration are fields of courses that students can select to build a body of knowledge in a particular domain that is both specialized and broad-based. At KCGI, we have identified nine categories of occupational domains that are closely watched by industry and where demand for ICT-related knowledge and skills is especially high. We select and group the courses according to purposes. Each student selects one field of concentration in accordance with the student's ambitions and goals, then focuses on studying that field. By acquiring units in various specialized fields, students can obtain a specialized-field certificate, proving specialized knowledge in that field. (For details on each field of concentration, please see p.15-.)



Artificial Intelligence (AI)

Students learn about artificial intelligence (AI) and related technical fields such as data science. After studying how AI is used in applied fields, with reference to real-world examples, students become proficient in numerous AI-related software applications. The aim is to develop professionals who can put AI to effective use. These courses include a program for developing advanced engineers who can develop their own AI applied software.

Data Science

The need to put accumulated volumes of data to effective use in applied IT fields is widely recognized. For this purpose, research and education is conducted on data management technology and methods of data analysis. KCGI offers numerous courses teaching expertise vital to various fields of IT, with study goals that are highly applicable in the business world.

Web Systems Development

Web system developers use programming languages and markup languages such as HTML5 to code websites. Their duties include use of a content management system (CMS). In addition to programming and coding of Web systems, students in these courses study the core technologies that underlie networks.

Network Administration

Networks are the vital mass of connections that support information systems. Network service administration involves configuration of computer networks and server systems, troubleshooting, support management, and recovery from failures and saving of data when failures occur. For these reasons, these courses impart knowledge about network system operation and information security.

Global Entrepreneurship

The aim of these courses is to cultivate leadership and an entrepreneurial mindset and to teach the knowledge and skills necessary to be an entrepreneur in the global business sphere. Studies focus on global businesses, including e-commerce and online businesses. Additionally, however, students gain an overview of finance and the basics of management, as well as the latest practical marketing approaches, such as growth hacks and growth marketing.

ERP

Focusing on industry giant SAP's enterprise resource planning (ERP) system for education, students engage in practical study about approaches for business integration and processes for tasks such as financial accounting and sales logistics. Students also analyze issues faced by a wide array of businesses and survey examples of ERP implementation. Research is also conducted on linking ERP to the latest enterprise infrastructure, such as in-memory databases and IoT.

IT Manga & Anime

In content and creative industries such as manga and anime, proficiency in ICT is a must. In addition to basic technologies, practitioners in these fields must be proficient in a wide variety of digital tools and have the ability to devise solutions according to circumstances. These courses cultivate people who can apply this comprehensive skill not only to create content but also to respond creatively to a wide range of challenges.

IT Tourism

In these courses, students learn about the application of ICT to create new tourism services and tourism business models. Examples include provision of tourism information in multiple languages and media; creating digital archives of tourists' activity histories, experiences and impressions; and analyzing and forecasting trends in tourism. These courses cultivate people who can propose solutions to revitalize tourism areas using tourism DX, creating and applying digital resources such as virtual tourism.

IT Entertainment

In this program focused on games and video entertainment, students acquire the knowledge needed to develop a new career based on the processes of entertainment production. Content includes discussion of the industry's needs in terms of IT, ICT and data infrastructure as well as technological advances.

Bespoke Curriculum

The field of ICT is advancing every day. To respond to this constant progress, it may be necessary not to limit oneself to a particular field of concentration but to compose and study one's own curriculum. A student may consult with an instructor according to his/her own study objectives and freely select courses from among course groups other than the mandatory courses, to build an original curriculum covering a wide range of knowledge and fields of application. We call this approach "a Bespoke Curriculum." Specialized-field certificates are not issued to students who choose this curriculum.

Fields of Concentration

Artificial Intelligence



Artificial intelligence (AI) is an important field of informatics that has attracted attention since the mid-20th century. As the 21st century dawned, progress in deep learning, capture of Big Data via the internet and growth in the speed and capacity of computer systems caused AI to emerge as a core technology with the potential to transform society. With focus on natural language processing, audio and video comprehension, search and inference, applications for AI are burgeoning, encompassing automated translation, automated speed recording, facial recognition, automated driving, medical-information processing, nursing-care service robots, games, e-sports and more. AI is also being used to spawn new businesses, including corporate business strategy, online businesses, farm manage-

ment and financial engineering. It is also used in text mining, which is the extraction of information from large volumes of uncollated documents.

In courses dedicated to AI, KCGI students learn basic theory of AI and conduct in-depth study of data science, and learn through case studies how this technology can be used in applied fields. Many KCGI students become masters of AI-related software, aiming for careers as specialists in the use and application of AI technology. KCGI focuses strongly on developing advanced engineers skilled in the development of AI application software. We are cultivating the personnel who will transform the society of tomorrow.

Target career paths

- People who are studying basic and applied AI technology so they can thrive in the coming AI society
- People who possess skills in developing large-scale Python programs and can put existing AI-related software to effective use
- Advanced engineers who can manage the development of software for innovative AI applications in pattern recognition (image, voice, language, etc.) and in business

Messages from Project Sponsors

Professor Masaharu Imai

These days we hear about building "Industry 4.0," "Society 5.0" and a people-centered society. For these to occur, three fields of technology are indispensable: AI, IoT and Big Data. Of these, AI (machine learning and deep learning), as exemplified by ChatGPT, is gradually assuming important roles as an assistant to human beings, both for the future of business and in everyday life. I encourage you to learn how to solve a wide range of problems and develop applications using AI.



Course Pathway (Recommended Study Patterns)

Mandatory Core courses Applied courses Industry Courses / Supporting Electives Basic courses

Students in this program seek to acquire the ability to thrive in the AI-assisted society of the future and to use and apply AI technology in a wide range of fields as AI specialists.

After studying the basic theory of AI and related technologies, students examine real-world case studies to discover how they can apply that basic theory and technology in a diverse range of AI applied fields. By studying Python, a language used widely in the AI field, along with numerous other software products related to AI, students are cultivated to be capable of using and applying AI technology in various areas. We also offer programs that cultivate advanced engineers who can be tasked with developing AI application software.



1st semester	2nd semester	3rd semester	4th semester
Introduction to AI	Machine Learning and Its Application	Knowledge Expression and Deductive Reasoning	IoT and AI
Introduction to Algorithms	Mathematics for AI	Logical Thinking	Games and AI
Computer Programming (Python)	Combinatorial Optimization	Natural Language Processing	Robotics and AI
Computer Organization Theory	Data Mining	Speech Comprehension	New Businesses and AI
Fundamentals of Database Technology	Data Analysis 1	Data Analysis 2	Medical Frontier Informatics
Fundamental Mathematics for Applied Informatics	AI Software Applications 1	AI Software Applications 2	Fundamentals of Fintech
Statistics for IT	Object Oriented Programming		
	Advanced Topics in Database Technology		
	Information Media Engineering		
Professional Communications in the ICT Industry	Project Foundations		
Leadership Theory			
			Master Project
			Selected from other concentration courses, industry courses and supporting electives

Data Science



Data science is an information-related field that has attracted great attention recently. In recent years, numerous voices have spoken out about the need to put large volumes of accumulated data to effective use in a variety of applied IT fields. Data science is the specialized field of research and education in data management technologies and methods of data analysis. Database technology and methods of statistical analysis have long been applied in data management and data analysis.

However, conventional technologies are unable to handle today's explosive growth in Big Data. More advanced data processing technologies, both in hardware and software terms, are needed.

In specialized fields of data science, students acquire the knowledge and skills to grapple with the challenges described above and learn advanced methods of applying data in business.

Target career paths

- Analysts, who perform extraction and use of information resources (data mining), market analysis, etc.
- Consultants, who provide advice and policy for product planning
- CIOs, who can make decisions on proposal and promotion of corporate strategy based on data
- CRM managers, who construct recording models and strategies as well as forecasting models for consumer behavior

Messages from Project Sponsors

Professor Yoichi Terashita

The projects I supervise involve research and practical experience in data accumulation, management and analysis. While projects are grounded in conventional database management technologies, students also experience the application of new data management technologies that can handle the recent emergence of Big Data. My goal is to train people who can play active roles in the many leading-edge IT companies active today. As the name of this field of concentration suggests, these data management technologies have come to be referred to collectively as "data science." Data science is sure to acquire mounting importance going forward as a foundation of IT.



Course Pathway (Recommended Study Patterns)

Mandatory Core courses Applied courses Industry Courses / Supporting Electives Basic courses

Become an analyst who can analyze business data and apply it in decision-making.

This field of concentration aims to produce analysts who can analyze business data and support the proposal and advancement of corporate strategies by leveraging techniques such as data mining and statistical analysis. In Fundamentals of Database Technology and Advanced Topics in Database Technology, students learn techniques for accumulating business data; in Data Analysis I/II and other courses, students learn techniques for extracting knowledge from accumulated data.

1st semester	2nd semester	3rd semester	4th semester
Fundamentals of Computer Programming	Data Analysis 1	e-Commerce Methodologies	Data Warehouses and Big Data
Introduction to Web Business	Web Programming 2	Qualitative Data Analysis and Transformation	Cutting Edge of Applied Information Technology A In-memory Database
Fundamentals of Database Technology	Exploratory Data Analysis and Visualization	Internet Business Strategies and Marketing	Fundamentals of Fintech
Statistics for IT	Theories of Data Mining	Practical Cloud Computing	Environmental Information Systems
Computer Programming (C++)	Advanced Topics in Information Ethics	Organizational Behaviour	
Fundamental Mathematics for Applied Informatics	Advanced Topics in Database Technology	Data Analysis 2	
Computer Organization Theory	Advanced Topics in Business Administration		
Web Programming 1			
Professional Communications in the ICT Industry	Project Foundations		
Leadership Theory	Master Project		
Selected from other concentration courses, industry courses and supporting electives			



Web Systems Development



Web systems development as a rule includes both production of websites on corporate intranets, holding content for company-internal use, and production of websites on the internet, published for outside use. Generally, web system developers code websites using programming languages and markup

languages such as HTML5. However, their duties also include use of content management systems (CMS). In this concentration, students learn how to program and code Web systems and study the basics of networks.

Target career paths

- Designer/programmer of convenient and useful websites
- Producer engaged in launching new websites and supporting and improving existing ones
- Website manager supporting and improving excellence in his company's website
- Engineer who can integrate existing web services with cloud services to build applications

Messages from Project Sponsors

Associate Professor Takao Nakaguchi

Web system development is incredibly varied. It uses mature technologies that are already widely used to produce services efficiently, but it also makes use of the latest technologies to create services never seen before. It may involve Web systems with the kinds of administrative screens seen in office settings, or it may consist of creating AR applications for use on smartphones. Some projects may involve the Internet of Things (IoT), which gathers information from devices such as sensors and cameras. Others may apply artificial intelligence (AI) to integrate image recognition with abnormality detection, for example. Many recent system development projects were realized using Web technology. A wide range of programming languages, databases and so on also come into play.

What is important, when operating with such a diverse range of technologies, is to establish clearly the purpose for which you are developing the system. What field is the system intended for use in? What is the problem and how will the system solve it? What technologies will you use to create your proposal? Once you have established these things, you can develop your system, have users try it out and evaluate the results. Participation in such projects provides students with the skills they need to design and develop the systems on which society depends. After completion, we expect students to embark on active careers as Web technology experts.



Course Pathway (Recommended Study Patterns)

Mandatory Core courses Applied courses Industry Courses / Supporting Electives Basic courses

For students who are strongly focused on developing Web systems centered on HTML5.

To become an engineer who develops Web apps or a manager of a website, the student can build up his development skills by attending Web Programming 1-3. By attending Fundamentals of Database Technology and Advanced Topics in Database Technology, he or she can learn to construct the section that manages the data provided by the Web system. In addition, the student can add Object Oriented Systems Design and Software Engineering to his curriculum to learn about designing processes further upstream.



1st semester	2nd semester	3rd semester	4th semester
Introduction to Web Technology	Web Programming 2	Web Programming 3	Software Engineering
Introduction to Web Business	Object Oriented System Design	Object Oriented Programming	Mobile Application Development
Computer Programming (Python)	Advanced Topics in Database Technology	Design Thinking	Web Services Development
Introduction to Algorithms	Information Security	Project Management	
Computer Programming (C++)	AI Software Applications 1		
Web Programming 1	Computer Organization Theory		
Fundamentals of Networking	Statistics for IT		
Fundamental Mathematics for Applied Informatics			
Fundamentals of Database Technology			
Professional Communications in the ICT Industry	Project Foundations		
Leadership Theory	Master Project		
Selected from other concentration courses, industry courses and supporting electives			



Network Administration



Network services are a critical element of today’s information systems. Network administrators build computer networks and server systems, troubleshoot obstacles, and manage and support these networks and systems. When trouble occurs

on a network, the network administrator recovers from the problem and maintains the data on the network. In this concentration, students acquire knowledge about the operation of network systems and about information security.

Target career paths

- Internet Service Designer/Operator/Administrator
- Security manager for corporate intranets and mission-critical business systems
- Manager who builds and operates various server environments (Web, database, video, etc.)
- Consultant integrating and supporting a wide range of networks, including cloud services and IoT devices
- Engineers for the development and operation of online server/client systems

Messages from Project Sponsors

Professor Shozo Naito

In the construction and operation of information systems, networks and security complement each other like the wheels of a car. The development of networks makes information systems powerful and convenient, but at the same time it multiplies security risks. As more and more things are linked online (as with IoT), an increasing range of services are becoming networked and migrating to the cloud. Such service environments can be achieved with sufficiently robust information security. The current reality, however, is that leaks of personal information and other security failures are a frequent occurrence. Students are advised to challenge themselves to learn about the latest in networks and information security technologies while striking a balance between theory and application.



Course Pathway (Recommended Study Patterns)

Mandatory

Core courses

Applied courses

Industry Courses / Supporting Electives

Basic courses

For students aiming for a career as a specialist in network infrastructure technology and information security.

Students in this concentration aim to become a specialist in information networks, such as a maintenance/operation engineer for company-internal networks and servers, or a security manager. Having already studied network systems by attending Fundamentals of Networking and Advanced Studies in Networking, he or she challenges to learn new technologies by attending courses such as IoT and Wireless Networks and Cloud Networking and Virtualization.

1st semester	2nd semester	3rd semester	4th semester
Introduction to Web Technology	Information Security	Advanced Studies in Networking	IoT and AI
Computer Programming (Python)	Cyber Security	IoT and Wireless Networks	Cloud Networks and Virtualization
Fundamentals of Networking	AI Software Applications 1	System Administration	Advanced Routing and Switching
Computer Programming (C++)	New Laws for the Entrepreneur	Routing and Switching	Web Services Development
Fundamental Mathematics for Applied Informatics	Advanced Topics in Information Ethics	Internet Governance	
Fundamentals of Database Technology	Theory of Global Internet Management	Advanced Studies in Cybersecurity	
Web Programming 1			
Computer Organization Theory			
Statistics for IT			
Professional Communications in the ICT Industry	Project Foundations		
Leadership Theory			
Master Project			
Selected from other concentration courses, industry courses and supporting electives			



Global Entrepreneurship



Global entrepreneurs launch, develop and manage their own and others’ venture businesses and apply their expertise to support the development of businesses in other industries. The aim of this concentration is to foster in students an entrepreneurial mindset and leadership while providing the knowledge and skills necessary to start an enterprise in the global business field. While focusing on global business, including e-commerce and Web-based business, students study basic concepts in finance, marketing and management.

In Global Entrepreneurship, students study not only concepts in IT and management but also the latest marketing methods, to be an immediate asset to a company or project. Such methods include growth hacking, which is the solution of issues using Web marketing, and growth marketing, which involves boosting profitability by grasping data focused on strengthening relationships with customers (applying Big Data and data science to improve UX, etc. in a short period of time).

Target career paths

- Corporate manager
- Management strategy planner
- Management consultant
- Planner of startup investment businesses
- Designer of online businesses
- Business development producer
- Planner of marketing strategies

Messages from Project Sponsors

Professor Hong Seung Ko

In the project I'm leading, we focus on marketing strategy, which is essential for anyone involved in corporate management to understand and learn. Especially today, as the internet makes every business a potentially global business, more attention is being paid to e-marketing strategy planning as a way to maximize business efficiency online and grow sales and earnings.

To draft a more effective e-marketing strategy, it's important to understand the online business environment. In this environment, Big Data is used to expand sales and increase earnings. Information technology (IT) is the foundation of e-marketing, so e-marketing professionals need to learn IT along with a variety of related knowledge. To boost online sales and earnings, we use Big Data to analyze trends in consumer and customer purchasing behavior that we could not visualize otherwise. Statistical analysis is used to conduct online marketing in a strategic manner. IT is closely linked to the globalization of business. Students who select Global Entrepreneurship learn how to use IT to strengthen a company's competitiveness, as a precondition for boosting sales and earnings in today's rapidly changing business environment. For this purpose, students are expected to gain an understanding of marketing strategy as the core of knowledge management focused on consumers and customers, and to acquire knowledge in related fields as well.



Course Pathway (Recommended Study Patterns)

Mandatory

Core courses

Applied courses

Industry Courses / Supporting Electives

Basic courses

For students aiming to become an entrepreneur who applies IT in a new business.

Students in this concentration aim to be entrepreneurs who take up the challenge of launching a business that strategically manages people, funds and/or information. The student learns how to propose a business plan, which is a vital part of launching an enterprise, by attending Global Entrepreneurship and Business Models. To learn how to manage the new company's accounts after startup, the student attends Current Issues in IT Industry. In Organizational Behavior, the student learns how to motivate human organizations.

1st semester	2nd semester	3rd semester	4th semester
Business Economics 1	Project Management	Global Human Resource Development	Game Theory and Negotiation
Business Economics 2	Global Entrepreneurship and Business Models	Internet Business Strategies and Marketing	Advanced Topics in Business Administration
Introduction to Web Business	Practical Cloud Computing	e-Commerce Methodologies	New Laws for the Entrepreneur
Statistics for IT	Intellectual Property Rights Law	Design Thinking	Leading Meaningfully for Sustainable Growth
Fundamental Mathematics for Applied Informatics	Current Issues in IT Industry	Practical Studies for Business Management	
Web Programming 1	Advanced Topics in Information Ethics	Brand Design and Business Management	
	Organizational Behaviour	IT Business Negotiation	
	Theory of Global Internet Management	Internet Governance	
Professional Communications in the ICT Industry	Project Foundations		
Leadership Theory			
Master Project			
Selected from other concentration courses, industry courses and supporting electives			





ERP (Enterprise Resource Planning)



Enterprise resource planning (ERP) is an integrated management system that centrally manages the wide range of resources at the disposal of a company to use those resources to maximum effect. Companies that introduce ERP can unify management of core corporate functions, including sales, purchasing, inventory control, accounting, personnel management and manufacturing processes, on a single platform. In ERP, information generated by each division is shared in real time, boosting the overall efficiency of the enterprise. This information sharing optimizes business processes, improves transparency of information and enables rapid deci-

sion-making, supporting competitive business management. The ERP training program using SAP's S/4HANA focuses on business process streamlining and data application. Through practical study of how the system is used and its applications in fields such as finance, logistics and personnel, students learn how to optimize corporate management and advance digital transformation (DX). Students also learn how to apply information processing skills in real time to support decision-making. This program is an educational opportunity you shouldn't miss if you're aiming for a career as a business leader or specialist.



Target career paths

- ERP implementation consultant
- ERP customization engineer
- ERP add-on development engineer

Messages from Project Sponsors

Professor Yi Li

In these days of intensifying competition, many companies are implementing ERP integration packages to improve their business. As companies in a diverse range of business implement ERP systems for business integration, ERP consultants are needed who have the skills to analyze the characteristics of each business type and implement systems that respond to the needs of each company's operations. Having acquired knowledge of management and accounting and learned basic IT skills such as programming, students at KCGI learn how to customize ERP systems for purchase inventory, production, sales and distribution, accounting and human resource management. In the Master Project, students conduct research on industry-specific ERP implementation and propose solutions to management issues aimed at improving business processes. Students not only customize ERP systems but also develop add-ons and external systems when necessary. As globalization advances, demand for ERP consultants who can play a role on the international stage is mounting. KCGI develops global ERP consultants who can respond to the needs of the age, in both Japanese and English. In addition to customization of English/Japanese ERP systems, we advance research that responds to the need for ERP systems that are compliant with international financial reporting standards (IFRS). We also conduct research on implementation of country-specific ERP systems, surveying the accounting systems and business customs of various countries. Many of our students are working hard to fulfill their dreams of becoming ERP consultants in global consulting firms.



Course Pathway (Recommended Study Patterns)

Mandatory Core courses Applied courses Industry Courses / Supporting Electives Basic courses

For students who are studying ERP to become a consultant who optimizes business processes.

This concentration is for students who aim to be an ERP consultant who introduces and optimizes corporate IT systems, or a system engineer or programmer who designs and develops add-ons for ERP packages. By studying applied courses related to SAP's ERP packages (Financial Accounting System Development 1, 2, for example), the student can learn about ERP systems in stages.



1st semester	2nd semester	3rd semester	4th semester
Information Systems for Enterprises	Financial Accounting System Development 1, 2	Sales and Distribution System Development	Advanced Topics in ERP Consultation
System Integration and e-Business	ERP Business Applications Development	Material Management System Development	Human Resource Management System Development
International Accounting	Production Control System Development	Object Oriented Programming	
Web Programming 1	Web Programming 2	Machine Learning and Its Application	
Statistics for IT	Fundamentals of Database Technology		
Fundamental Mathematics for Applied Informatics			
Fundamentals of Computer Programming			
Professional Communications in the ICT Industry	Project Foundations		
Leadership Theory	Master Project		
Selected from other concentration courses, industry courses and supporting electives			

IT Manga & Anime



KCGI offers students the opportunity to experience a wide range of situations encountered in creative Industries. Taking a close look at manga, anime and other aspects of the culture and content-creation industries for which Japan is world-famous, students learn to apply these approaches online, creating new business models based on research in the business models of conventional content/creative industries. Students also engage in practical study of the planning and creation of anime and the like. KCGI's curriculum offers practical study focused on specific problems and solutions. We have entered an era of large-scale joint development

in the world of manga and anime. Ordering and acceptance of orders across national borders is not unusual. Moreover, ICT has become an essential part of the internationally developing content and creative industries. In addition to basic skills such as drawing, video editing and storyboarding, content creators must be versed in the use of digital tools and know how to devise solutions according to each situation. In this specialized field, we cultivate people who can not only master these comprehensive skills and create compelling content but also apply creative approaches in work and life.



Target career paths

- Producer who comprehensively handles planning, production and promotion of cartoon and animation content
- Content creator skilled in the use of both digital and analog production tools
- Director who can use video composition and effects with the right impact for the purpose of each production
- Marketing director who can plan content in view of trends in the cartoon and animation markets, in education, entertainment and so on

Messages from Project Sponsors

Professor Koji Ueda

My fields of specialization are curriculum development regarding programming, multimedia and ICT and technology transfer to developing countries. For developing and developed countries, I believe it will soon be possible for everyone worldwide to obtain the education they want simply and effectively, using excellent content available through e-learning. When that happens, I expect animation, a method of expression found everywhere, to be put to effective use in this regard. Becoming an anime creator involves the skills to apply digital tools to create works of art, but it includes much more. Anime creators need to know about business models that encompass methods of content development, cost control and distribution of works of art. Content creators must also have the flexibility to create content that can easily be introduced across borders, based on an understanding of the conditions and cultures of each country. My goal for this concentration is to develop content creators who can approach content creation from a comprehensive viewpoint and distribute it worldwide using ICT.



Course Pathway (Recommended Study Patterns)

Mandatory Core courses Applied courses Industry Courses / Supporting Electives Basic courses

For students who wish to become an expert content creator in animation, video or the like.

Students in this concentration aim to become a professional content creator, focusing on manga and anime. In Special Topics in Anime, Planning, Production and Promotion, Scenario Writing and Storyboarding, the student learns the upstream processes of creating manga and anime, while in Rich Media Content Development and Digital Animation Creation he or she learns how to produce digital content using specific tools.



1st semester	2nd semester	3rd semester	4th semester
Rich Media Content Development	Digital Animation Creation	Computer Graphics	Digital Audio Production
Animation Drawing Fundamentals A	Special Topics in Anime, Planning, Production and Promotion	Visual Story Telling and Communication	Advanced Special Visual Effects
Introduction to Western Art History	Scenario Writing and Storyboarding	Practical Anime Production	Entertainment in IT
Special Topics in Content Industry	Visual Image Processing	Special Visual Effects	Brand Design and Business Management
Web Programming 1	Animation Drawing Fundamentals B		
Fundamental Mathematics for Applied Informatics	Introduction to Modern Art History		
Computer Organization Theory	Fundamentals of Japanese Cinema History		
Professional Communications in the ICT Industry	Project Foundations		
Leadership Theory	Master Project		
Selected from other concentration courses, industry courses and supporting electives			



## IT Tourism



Sightseeing areas are emerging that are “good to live in and good to visit,” and sustainable tourism is in demand. In this field of concentration, students learn about the creation of new tourism services and new tourism business models. Examples include the provision of tourism information in multiple languages and via multiple media; and the digitalization, analysis and forecasting of tourist activity history. As

the tourism industry comes face-to-face with a range of new issues, this field of concentration is training a new generation of problem-solvers. These are individuals who can propose plans to vitalize tourism areas through the use of digital transformation for tourism (tourism DX), creating and applying digital resources using digital tourism and similar tools.



### Target career paths

- Engineer engaged in planning of tourism systems, system development and use of Big Data
- Manager possessing the skills to make tourism service management more efficient using IT
- Tourism-DX personnel who can quickly, creatively and proactively discover useful information for the next-generation tourism industry
- Top-level management personnel who can lead the tourism industry

### Messages from Project Sponsors

Professor Meihui Li

My specialty lies in global personnel development. In recent years, globalization of economies has advanced while the number of foreign-affiliated companies entering Japan has increased. At the same time, overseas markets have grown more dynamic than ever. As a result, a sharp increase has been seen in the number of Japanese enterprises seeking to move manufacturing and sales bases overseas. Demand for global personnel is booming at those companies, which are now scrambling to train, retain and secure such individuals. As the national government presses forward with its policy of making Japan a prime tourist destination, the tourism industry is attracting mounting interest as a key industry supporting the Japanese economy. The current surge in demand for people who can work in inbound tourism is certainly related to this trend.

In the midst of this bounty, one emerging problem is overtourism. Problems such as overcrowding of public transit and behaviors perceived by Japanese as lacking in manners cause locals to feel a loss of security or safety. KCGI is located in Kyoto, a city rich with tourist attractions. Should the numerous traditional temples and shrines located throughout Kyoto be regarded as holy sites or as tourism resources? We routinely observe real-life cases of the friction between preservation of a regional cultural heritage and tourist demand. In this field of specialization, we use fieldwork to debate and think about measures to solve these problems, from the point of view of global integration of science with art. We aim to develop IT tourism specialists with the knowledge, skill and broad perspective to work on the front lines of IT tourism in Kyoto, one of the world's great sightseeing cities.



### Course Pathway (Recommended Study Patterns)

Mandatory Core courses Applied courses Industry Courses / Supporting Electives Basic courses

### For students who wish to become IT tourism specialists capable of planning tourism businesses and proposing related systems.

Students of IT tourism aim to become specialists who understand the characteristics of the regions that serve as tourism resources and the needs of tourists and can apply ICT in the deployment of services and marketing strategies. By attending courses such as Fundamentals of IT Tourism and Fundamentals of Tourism Business, students acquire operational knowledge and elemental skills tailored to the tourism industry. Through their studies in courses such as Tourism Data Analysis, Tourism Design and Tourism Destination Management, students learn to use social networks as a promotional tool, provide tourism information in multiple languages and media, convert tourists' activity histories into data, and apply those data in analysis and forecasting.



1st semester	2nd semester	3rd semester	4th semester
Fundamentals of Tourism Business	Tourism Design	Tourism Destination Management	Advanced Topics in IT Tourism
Fundamentals of IT Tourism	Global Human Resource Development	Tourism Data Analysis	IT Tourism Internship
Project Management	Web Programming 2	Object Oriented System Design	Mobile Application Development
Fundamentals of Computer Programming	Business Economics 1	Data Analysis 1	Rich Media Content Development
Web Programming 1	Global Entrepreneurship and Business Models	Special Topics in Anime Planning, Production and Promotion	Special Visual Effects
Statistics for IT	Media Communication	Visual Story Telling and Communication	Brand Design and Business Management
Fundamental Mathematics for Applied Informatics			
Professional Communications in the ICT Industry	Project Foundations		
Leadership Theory			
Master Project			
Selected from other concentration courses, industry courses and supporting electives			

## IT Entertainment



Improving connectivity, speed and accessibility have made the internet almost universally available. As a result, digital entertainment has shifted online, in terms not only of distribution but also storage, promotion, ownership and key production techniques. Modern entertainment, including movies, TV, music, games, live streaming, smartphone content and extended reality (XR) are today more dependent than ever on the development, maintenance and improvement of the IT infrastructure that supports them. Modern entertainment, including movies, TV, music, games, live streaming, smartphone content and extended reality (XR) are today more dependent than ever on the development, maintenance and improvement of the IT infrastructure that supports them.

Entertainment production companies are currently focused on cloud computing embedded with AI. If they succeed in packaging real-time performances, broadcast as they are performed live, into new experiences, that dependency will grow stronger than ever. The business world is looking for a new kind of personnel, people who possess a deep understanding of both the IT that supports this infrastructure and the methods of creating and distributing entertainment and content. In the IT entertainment field of specialization, against a background of industry needs for IT, ICT and data infrastructure, students acquire the knowledge they need to develop new careers focused on entertainment production processes, with special attention to games and video entertainment.

### Target career paths

- Infrastructure manager: Manages and maintains stable operation of corporate or organizational IT infrastructure (networks, servers, cloud, storage, security, etc.)
- Entertainment IT manager: Manages and optimizes IT infrastructure and digital services in the entertainment industry, in areas such as games, streaming, video production and music distribution
- Platform engineer: Designs, develops and operates infrastructure and platforms that serve as the bases for software and services
- Engineering project manager: Responsible for planning, execution, monitoring and completion of engineering projects
- Digital media system engineer: In charge of design, development and operation of systems necessary for production and distribution of digital media
- Media technology engineer: Provides engineering solutions regarding production, processing and distribution of media content (video, audio, still images, games, etc.)

### Messages from Project Sponsors

Professor Akiyoshi Watanabe

Digitalization has transformed the way content is made in the entertainment sector. In music composition, for example, expensive equipment such as analog consoles, multi-track recorders and processors have given way to digital audio workstations (DAWs), which can be run on ordinary, readily available notebooks, tablets and PCs. This turn of events is not merely the replacement of analog technology with digital. It is a change in the relationship between people and music, with digital technology enabling processes that were difficult or impossible by analog means. In other fields as well, such as moviemaking and live events, the application of IT is blazing trails to new possibilities. Our aim is to develop personnel who can play active roles in the rapidly emerging IT entertainment space.

The KCGI curriculum includes not only study of the latest technologies but also opportunities to listen to real classical music. However much technology may change it, ultimately people are the ones who judge whether music is good or bad. As such, we believe that familiarity with conventional music remains a valuable learning experience.



### Course Pathway (Recommended Study Patterns)

Mandatory Core courses Applied courses Industry Courses / Supporting Electives Basic courses

### Become an IT system manager who can plan and manage the technical processes necessary for the latest online entertainment platforms and games as well as video and music production.

Acquire the knowledge you will need to develop a new career based on entertainment production processes. With emphasis on games and video entertainment, the content touches on the requirements of industry IT, ICT and data infrastructure and advances in technology.



1st semester	2nd semester	3rd semester	4th semester
Fundamentals of Entertainment Technology	Content Promotion	Entertainment in IT	Applied Market Research
Introduction to the Global Video Game Industry	Media Communication	Advanced Game Programming	Advanced Video Games
Computer Organization Theory	Basics of Business Video Games	Video Production	IT Entertainment Internship
Fundamentals of Database Technology	Game Programming	Digital Audio Production	Special Topics in Content Industry
Fundamentals of Computer Programming	Intellectual Property Rights Law	System Administration	Cloud Networks and Virtualization
Web Programming 1	Modern Asian Music	Social Media Marketing and Planning	Anime Business
Fundamental Mathematics for Applied Informatics	Introduction to Music	Special Topics in Anime Planning, Production and Promotion	Music in IT
	Creative Seminar	Modern Music Theory	Animation Planning and Production
Professional Communications in the ICT Industry	Project Foundations		Special Visual Effects
Leadership Theory			
Master Project			
Selected from other concentration courses, industry courses and supporting electives			



## Responding to Industry

These courses apply studies in fields of concentration to specific industries that require specialized knowledge on practical use of ICT. KCGI has focused on the five industries and business types listed below as those in which IT can be expected to play a vital role in solving a range of issues. Courses are selected and grouped with a view to developing people who can play an active and dynamic role in each respective industry.

### Finance



Fintech is an umbrella term for new financial IT services such as electronic settlements and virtual currencies. Today fintech is one of the most closely watched sectors on the business landscape.

Students learn about the accounting and financial arrangements that form the background to financial IT services, while also studying the state of fintech system design. Using this knowledge as an entry point, students learn to combine a range of IT skills, such as Web and smartphone application development and data collection and analysis, to play an active role in fintech.

### Agriculture



As vegetable factories and agricultural-support cloud services attest, IT can be applied to solve problems in Japanese agriculture that have proliferated in recent years, such as shortages of farm successors and declining competitiveness against imports.

We introduce a wide range of current case studies on the intersection of agriculture with IT; background information on the frameworks by which produce is grown, distributed and consumed; and directions in innovation of these frameworks. Students learn how to design stand-alone systems in agricultural IT, including environmental sensors and IoT. By combining this knowledge with concentrations such as Business Data Analytics and Web Systems Development, students can aim for careers as engineers and consultants with active roles in the agricultural field.

### Marine



The development of the marine and aquaculture industries depends on the use of IT to enhance navigational safety and make fishing efficient and sustainable. Today the industry is searching for new IT-based solutions, such as marine resources with traceability features using satellite tracking and systems for collecting environmental data. Meanwhile the marine industry is under pressure to reduce energy consumption and improve safety in navigation, reduce greenhouse-gas emissions, prevent marine pollution and use natural energy from the sea. In this industrial field, KCGI trains the future leaders of marine IT.

### Health & Medical



The implementation of IT in the medical field is advancing at a galloping pace, embracing medical clerical systems, ordering systems, electronic medical record systems, image diagnosis and much more. Treatment data formerly used to treat one patient at a time, medical-equipment data and so on are being gathered and analyzed as Big Data, for use in preventing infectious diseases and optimizing treatment plans. Analysis of words and phrases related to medical treatment on the internet is playing a role in the forecasting and prevention of infectious diseases. In these and other ways, the use of IT in medicine is expanding, creating high demand in the medical field for professionals who can apply advanced IT to a host of problems.

### Education



A wide range of IT terminals have found their way into the educational space today, including a wide variety of e-learning systems and tablets. Combining educational materials from an instructor with other media and modes of expression, to create and share new content, is now a basic educational process. Educators can create compelling and accessible educational resources incorporating not only text and pictures but also audio, video and infographics. Activities such as organizing and presenting graphed data from one's own studies are now routinely demanded.

It is now expected, not only in education but also in a wide range of industrial fields such as agriculture and marine operations, that veteran practitioners will find ways to preserve their expertise and bequeath it to future generations. This is to be done by recording and organizing this knowledge as video or activity data and drawing from these resources to create educational materials accessible to a wide audience.

Students learn how to combine a wide range of media and modes of expression based on an appropriate instructional design, thereby creating an effective environment for e-learning. Through this process students engage in practical study of the use and application of educational media in ways that are effective in fostering dialogue between students and instructors.



## Educational Environment and Systems

*A practical education environment including world-standard business systems*

### Learning Management System

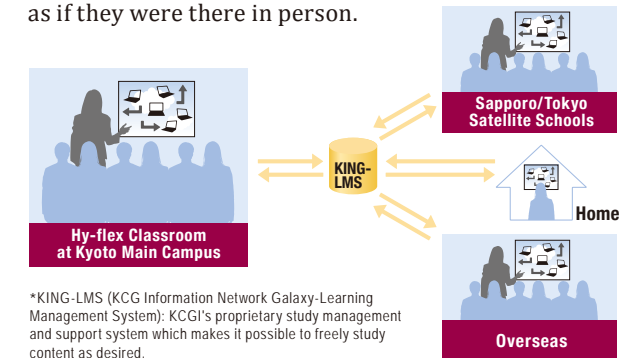
■ KCGI offers comprehensive study support with three class formats for modern education: real-time online classes (synchronized e-learning), on-demand classes (non-synchronized e-learning) and hybrid classes (in-person lessons combined with online streaming).

Since its inception, KCGI has built IT into its study environment. One part of that endeavor is the introduction of KING-LMS, a learning management system.

KING-LMS can be accessed from the Hyakumanben Campus of the Kyoto Head School, from Kyoto Ekimae Satellite, Sapporo Satellite and Tokyo Satellite, and from home or anywhere via PC or smartphone. This study environment enables students to perform tasks such as browsing lesson content, submitting assignments and contacting instructors. Complementing KING-LMS are the hybrid-flexible ("hy-flex") classrooms provided in the Main Building of Hyakumanben Campus. Classes held here enable students to participate from any location without special or separate treatment.

In the hy-flex classrooms, cameras can track instructors as they move around each room, so that students attending online can see the instructor's face as they

watch. At the same time, a large monitor in the classroom displays images of the students attending remotely, so students can ask questions and engage in conversation using directional microphones and speakers. Thanks to these innovations, remote students can participate just as if they were there in person.



### Library & e-Library

The library in the Main Building of Hyakumanben Campus offers self-service borrowing and return of books.

Also at the Main Campus, KCGI is a subscriber to the electronic libraries of the Association for Computing Machinery (ACM), based in the United States, and the Information Processing Society of Japan (IPSJ). Through these electronic libraries, students can access these two

associations' and others' publications, including the full text of numerous academic journals. In many cases, students can view back catalogues going back decades. Students can also use resources such as the Academic Information Network of the National Institute of Informatics. These resources are valuable for use in surveys and research.

### SAP ERP Systems for Education

■ Developing Business Personnel by Implementing ERP Packages from SAP

To develop Business Personnel with advanced IT skills in the IT field, KCGI has implemented SAP S/4HANA, an enterprise resource planning (ERP) system from Germany's SAP GmbH, the world's largest ERP packaged-software vendor, to create a practical learning and research environment. KCGI is the institution in Japan that has introduced such a system to develop full-fledged specialists in ERP including system development.

■ Effective Implementation in Management

SAP's ERP systems are huge, complex systems. At KCGI, students do not merely learn how to operate SAP ERP systems. They also learn the sequence of work procedures at companies, while acquiring advanced practical skills such as customizing SAP systems to support work processes and consulting on introducing ERP systems at companies.

■ Cultivating Advanced Practical Skills

At KCGI, students examine, from a variety of angles, how

SAP S/4HANA works and how it can support work processes. Through practical study, students learn how the implementation of ERP changes overall work processes, including purchase-inventory management, production, sales and distribution, accounting and human resource management. Through its specialist ERP courses, KCGI graduates students have passed the qualification exam for Certified SAP Consultant.

■ High-performance Computing Systems

Students at KCGI conduct research in fields requiring prodigious computing power, such as AI/machine learning, Big Data analysis, computer graphics, combinatorial optimization and quantum computing. To support these studies, in the 2022 academic year KCGI introduced 16 high-performance computing systems incorporating the latest high-end GPU, the NVIDIA RTX A6000. These computers boast peak performance of approximately 620 teraflops (620 TFLOPS). Each of these systems consists of four computer servers, enabling them to run multiple programs in parallel.



Main Credit Courses for Major in Web Business Technology

Categories	Classification	Courses	Number of Credits	Practice	Courses	Number of Credits	Practice	Important
Concentration Courses	Artificial Intelligence	Statistics for IT	2		Medical Frontier Informatics	2		Select one of these fields of concentration. You can also select courses from among the industry courses.
		Introduction to AI	* 2		Robotics and AI	2		
		Introduction to Algorithms	* 2		New Businesses and AI	2		
		Computer Programming (Python)	* 3	○	Mathematics for AI	* 2		
		Fundamentals of Database Technology	2		IoT and AI	3	○	
		Computer Organization Theory	2		Speech Comprehension	2		
		Fundamental Mathematics for Applied Informatics	2		Fundamentals of Fintech	2		
		Machine Learning and Its Application	* 2		Logical Thinking	* 2		
		Combinatorial Optimization	* 2		Object Oriented Programming	4	○	
		AI Software Applications 1, 2	* (1 only) 2 each		Data Analysis 1, 2	* (1 only) 2 each		
		Data Mining	* 2		Games and AI	2		
		Advanced Topics in Database Technology	4	○	Knowledge Expression and Deductive Reasoning	* 2		
		Natural Language Processing	2		Information Media Engineering	2		
	Data Science	Fundamentals of Database Technology	2		Advanced Topics in Information Ethics	2		
		Statistics for IT	2		e-Commerce Methodologies	2		
		Fundamental Mathematics for Applied Informatics	2		Practical Cloud Computing	2		
		Computer Organization Theory	2		Organizational Behaviour	* 2		
		Web Programming 1, 2	* (2 only) 2 each	○	Data Warehouses and Big Data	2		
		Fundamentals of Computer Programming	2		Cutting Edge of Applied Information Technology A In-memory Database	1		
		Introduction to Web Business	2		Fundamentals of Fintech	2		
		Qualitative Data Analysis and Transformation	* 2	○	Advanced Topics in Business Administration	* 2		
		Exploratory Data Analysis and Visualization	4	○	Data Analysis 1, 2	* (1 only) 2 each		
		Theories of Data Mining	2		Computer Programming (C++)	3	○	
		Advanced Topics in Database Technology	* 4	○	Fundamentals of Remote Sensing in the Aquatic Environment	2		
		Internet Business Strategies and Marketing	2					
	Web Systems Development	Fundamentals of Database Technology	2		Web Services Development	4	○	
		Statistics for IT	2		Web Programming 3	* 4	○	
		Computer Programming (Python)	* 3	○	Object Oriented Programming	* 4	○	
		Fundamental Mathematics for Applied Informatics	2		Object Oriented System Design	* 4	○	
		Web Programming 1, 2	* (2 only) 2 each	○	Software Engineering	2		
		AI Software Applications 1	2		Design Thinking	4		
		Introduction to Web Business	* 2		Mobile Application Development	2	○	
		Advanced Topics in Database Technology	* 4	○	Computer Programming (C++)	* 3	○	
		Computer Organization Theory	2		Project Management	2		
		Fundamentals of Networking	2		Introduction to Algorithms	2		
		Introduction to Web Technology	2					
	Network Administration	Fundamentals of Database Technology	2		IoT and Wireless Networks	* 3	○	
		Statistics for IT	2		IoT and AI	3	○	
		Fundamental Mathematics for Applied Informatics	2		Information Security	* 2		
		Web Programming 1	2	○	Routing and Switching	* 2		
		Computer Organization Theory	2		Advanced Studies in Networking	* 2		
		Computer Programming (Python)	* 3	○	Introduction to Web Technology	2		
		Fundamentals of Networking	2		Web Services Development	4	○	
		AI Software Applications 1	2		Cyber Security	4		
		System Administration	2		Advanced Topics in Information Ethics	2		
		New Laws for the Entrepreneur	2		Internet Governance	2		
		Advanced Routing and Switching	4		Advanced Studies in Cybersecurity	4		
		Theory of Global Internet Management	2		Computer Programming (C++)	3	○	
		Cloud Networks and Virtualization	3	○				
	Global Entrepreneurship	Statistics for IT	2		Brand Design and Business Management	2		
		Fundamental Mathematics for Applied Informatics	2		Internet Business Strategies and Marketing	* 2		
		Web Programming 1	2	○	e-Commerce Methodologies	* 2		
		Leading Meaningfully for Sustainable Growth	2		Global Entrepreneurship and Business Models	* 2		
		Organizational Behaviour	2		IT Business Negotiation	2		
		Advanced Topics in Information Ethics	2		Game Theory and Negotiation	2		
		Introduction to Web Business	* 2		Design Thinking	4		
		Business Economics 1, 2	* (1 only) 2 each		Practical Cloud Computing	2		
		Intellectual Property Rights Law	2		New Laws for the Entrepreneur	* 2		
		Advanced Topics in Business Administration	* 2		Project Management	* 2		
		Practical Studies for Business Management	* 2		Global Human Resource Development	2		
		Current Issues in IT Industry	2		Internet Governance	2		
		Theory of Global Internet Management	2		Basics and Applications of Digital Healthcare	2		
		Fundamentals of Database Technology	2		Sales and Distribution System Development	3	○	
ERP		Statistics for IT	2		Production Control System Development	3	○	
		Fundamental Mathematics for Applied Informatics	2		Material Management System Development	3	○	
		Web Programming 1, 2	2 each	○	Human Resource Management System Development	3	○	
		Fundamentals of Computer Programming	2		ERP Business Applications Development	* 3	○	
		Information Systems for Enterprises	* 2		Advanced Topics in ERP Consultation	2		
		System Integration and e-Business	* 4	○	Object Oriented Programming	4	○	
		International Accounting	2		Machine Learning and Its Application	2		
		Financial Accounting System Development 1, 2	* 3 each	○				

Categories	Classification	Courses	Number of Credits	Practice	Courses	Number of Credits	Practice	Important
Concentration Courses	IT Manga & Anime	Fundamental Mathematics for Applied Informatics	2		Rich Media Content Development *	4	○	Select one of these fields of concentration. You can also select courses from among the industry courses.
		Computer Organization Theory	2		Visual Story Telling and Communication *	3	○	
		Animation Drawing Fundamentals A, B	2 each	○	Special Topics in Anime, Planning, Production and Promotion *	2		
		Web Programming 1	2	○	Computer Graphics *	2		
		Special Visual Effects	3	○	Practical Anime Production	2		
		Digital Audio Production	2		Entertainment in IT	2		
		Advanced Special Visual Effects	3	○	Brand Design and Business Management	2		
		Special Topics in Content Industry	2		Visual Image Processing	2		
		Digital Animation Creation *	3	○	Fundamentals of Japanese Cinema History	2		
		Introduction to Western Art History	2		Introduction to Modern Art History	2		
		Scenario Writing and Storyboarding	2					
	IT Tourism	Statistics for IT	2		Media Communication	2		
		Fundamentals of Computer Programming	2		Project Management	2		
		Fundamental Mathematics for Applied Informatics	2		Fundamentals of IT Tourism *	2		
		Web Programming 1, 2 * (2 only)	2 each	○	Fundamentals of Tourism Business *	2		
		Object Oriented System Design	4	○	Global Entrepreneurship and Business Models	2		
		Rich Media Content Development	4	○	Tourism Destination Management	2		
		Visual Story Telling and Communication	3	○	Tourism Data Analysis	2		
		Special Visual Effects	3	○	Advanced Topics in IT Tourism	2		
		Special Topics in Anime, Planning, Production and Promotion	2		Tourism Design *	2		
		Data Analysis I	2		IT Tourism Internship	2		
		Business Economics 1 *	2		Global Human Resource Development *	2		
	IT Entertainment	Brand Design and Business Management	2		Mobile Application DevelopmentIT	2	○	
		Fundamental Mathematics for Applied Informatics	2		IT Entertainment Internship	2		
		Fundamentals of Computer Programming	2		Anime Business	2		
		Web Programming 1	2	○	Animation Planning and Production	2		
		Computer Organization Theory	2		Music in IT	2		
		Fundamentals of Database Technology	2		Introduction to the Global Video Game Industry	2		
		Special Topics in Content Industry *	2		Applied Market Research	2		
		Entertainment in IT *	2		Basics of Business Video Games	2		
		Content Promotion *	2		Advanced Video Games	2		
		Fundamentals of Entertainment Technology *	2		Special Visual Effects	3	○	
		Media Communication *	2		Digital Audio Production	2		
		System Administration *	2		Special Topics in Anime, Planning, Production and Promotion	2		
		Social Media Marketing and Planning	2		Intellectual Property Rights Law	2		
		Game Programming	3	○	Cloud Networks and Virtualization	3	○	
		Creative Seminar	2		Introduction to Music	2		
		Advanced Game Programming	3	○	Modern Asian Music	2		
		Video Production	3	○	Modern Music Theory	2		
		Industry Courses	Finance	Money and Banking	2		Fintech Systems Design	
Fundamentals of Fintech	2							
Agriculture	Agricultural Informatics in Next Generation		2		Agricultural Information Systems Design	2		
	Agricultural Economics		2					
Marine	Fundamentals of Marine Industries		2		Marine Information Systems Design	2		
	Fundamentals of Marine IT		2					
Health & Medical	Medical Information and Law		2		Medical Information Systems Design	2		
	Medical Frontier Informatics		2		Basics and Applications of Digital Healthcare	2		
Education	Fundamentals of e-Learning Systems		2		International Comparative Study of School and Corporate Education	2		
	Instructional Design in e-Learning Business		2		Theory of Next-generation Higher Education	2		
	e-Learning Courseware Development	2		Fundamentals of American Educational Systems	2			
	Library Informatics	2		Development of Paradigm Concepts for Next-Generation Education	2			
Supporting Electives	Fundamental Mathematics for Applied Informatics	2		Advanced Business ICT Communication	3	○	Students may select freely from the list of courses at left.	
	Statistics for IT	2		Technical English Communications Skill	2			
	Visual Image Processing	2		Advanced Technical English Communications Skills	2			
	Technical Communications Skill	2		Web Programming 1	2	○		
	Business Presentation	2		Fundamentals of Database Technology	2			
	Business Communication 1,2	2 each		Computer Organization Theory	2			
	Media Communication	2		Fundamentals of Networking	2			
	Business ICT Communication	3	○	Fundamentals of Computer Programming	2			
	Advanced Topics in Systems Design	2		Fundamentals of Construction IT	2			
	Advanced Topics in Systems Theory	2		Study of Trends in Applied Technology	2			
	Production Systems Engineering	4	○	Environmental Information Systems	2			
	Robotic Process Automation	2		Introduction to Music	2			
	Cutting Edge of Applied Information Technology A	1		Modern Asian Music	2			
Cutting Edge of Applied Information Technology B	2							
Mandatory	Professional Communications in the ICT Industry	2		Project Foundations	2		☆	
	Leadership Theory	2		Master Project	0,2,4,6			

• Core courses are those marked with an asterisk \*. Core courses are courses that teach important knowledge and skills for each field of concentration. • At least 44 credits are required to complete the program (including mandatory courses). • To keep up with changes in technology and societal needs, courses offered may change from one academic year or term to the next. Also, your selected course may not be offered if at least five people do not sign up for it. ☆ For details on master projects, please see p. 13.

An overview of the main courses taught can be found here





Professor 伊藤 博之

# Hiroyuki Itoh

CEO of Crypton Future Media, Inc.,  
producer of *Hatsune Miku*

*With a name derived from the Japanese phrase "mirai kara kita hajimete no oto" ("the first sound from the future"), Hatsune Miku is a virtual idol who will sing with a synthetic voice when a user inputs lyrics and a melody into a computer. Hatsune Miku has held live concerts not only in Japan but overseas as well, swaying the hearts of a multitude of fans. Hiroyuki Itoh, CEO at Crypton Future Media Inc., the company which created the Hatsune Miku synthetic voice software that is the cause of this sensation, has joined KCGI as a professor. Professor Itoh, who continues to develop the software which produces the computerized voices, offers the following message for the young people who will lead the IT industry of the future. "The frontier of the information revolution of which we are only midway through is vast without limit and your future prospects spread before you without limit. I ask that you dedicate yourselves to your studies with this concept firmly in mind."*



Professor Hiroyuki Ito of KCGI speaks passionately as he recalls the development of Hatsune Miku, a Vocaloid software voicebank. (Great Hall, Kyoto Ekimae Satellite Campus, KCGI)



Crypton Future Media is neither a video game nor an anime company. Although we are involved with making music, we are also not a record company. Because we made the hobby of computer music into a business, I think of us as a "sound seller." Hatsune Miku was first offered for sale in August 2007, but I believe that the software became a chance for people to get involved in a creative activity.

It is said that humanity has experienced three revolutions in its past. The first was the agricultural revolution. Due to this revolution, human beings, who had been forced to be nomadic due to their reliance on hunting, produced food systematically and came to be able even to store it and thus began living in fixed settlements. Due to this, societies and states formed, also creating disparities in wealth. It could be said that the development of economics also became a cause of war.

The second revolution was the industrial revolution. Sources of power were discovered and the advance of innovations such as the ability to efficiently create identical items gave birth to mass production and mass consumption. This spurred trade and commerce, helping to bring about large-scale wealth. This revolution also caused a "population explosion." In the age of a high birth and high death rate prior to the industrial revolution, the human population was virtually fixed and fluctuations of wealth in society were also slight, but with the industrial revolution the human population rapidly increased.

And the third revolution is the information revolution brought about by the value of IT as represented by the internet. Prior to the internet, transmitters of information were limited and monopolistic. Sources of information included media such as newspaper companies, television and radio stations, and publishing companies, but when these groups dispatched information, it was accompanied by a significant cost in terms of facilities and human power. Further, information at this time was low in volume and unidirectional. However, the appearance of the internet has brought about this revolution in information.

The way in which information was dispatched has changed significantly. Now the internet is an extremely close presence, appearing in the palms of our hands, on our desks, and entering our pockets. Information which can be digitized, such as news, movies, and music, is entirely informationalized, making it possible to easily transmit and store it over the internet. Life and work have become extremely convenient, fun, and comfortable; in an instant you can summon and view your favorite videos and broadcast media. In addition, this information has made it possible for anyone to easily and instantaneously share about themselves with the world via Facebook, X, and blogs, including the tiniest pieces of personal news.

I believe, however, that we are still merely experiencing the prelude to the changes that will occur due to the information revolution. The agricultural and industrial revolutions brought about serious changes to the way human beings lived. The changes caused by the information revolution have not yet reached that level. This is merely a transition period, and the real changes have yet to begin. I believe we will see drastic changes to peoples' lifestyles and the world in 20 to 30 years from now. I do not, however, know what sort of changes these will be. How these will be changed has been entrusted to us and, moreover, the young people who will shoulder the next generation.





Professor 高弘昇

# Ko, Hong Seung



Former Manager of Information Strategies (CIO), Strategy Planning Office, Samsung Electronics Co., Ltd.

Representative Director, Nippon Applied Informatics Society (NAIS)

**Professor Hong Seung Ko was born in South Korea, and formerly worked for the giant South Korean electrical appliance and electronic components maker, Samsung Electronics as the Manager of Information Strategies to bring to life Internet-based corporate strategy, CALS (primarily B2B conceptually-based), and e-commerce for general consumers. He also made major contributions to the informatization and profitability of that company. Professor Hong spoke at length about the human talent that will be needed in the e-business world, as it undergoes dramatic shifts.**

## e-Business Requires a Strategy

— The world of e-business appears to be undergoing rapid changes. Has business also changed with the spread of the Internet?

Samsung launched their Website, both domestically and for international customers, in the mid-90s shortly after I became the Manager of Information Strategies. At the time, no one considered the Internet as a powerful tool for marketing, and it appeared to be no more than a means to improve the brand recognition of a company. However, when we opened the website, we received around 200 e-mails a day from all over the world inquiring about product aftercare services, complaints etc. That's when I had a feeling that we could probably use our website as a marketing tool.

Businesses that used the Internet, such as booking systems and stock trading, grew after that. But, we didn't see large-scale growth in sales simply by

developing and launching a system for use on the Internet. There was a failed IT boom that occurred in South Korea at the time where people thought that if they just used the Internet their business would do well. They thought that they could make commerce happen if they made an Internet shopping mall, put the products up and host customers from all over the world. But almost all of those Internet shopping malls disappeared from the Internet in several years' time. Ultimately, what they probably didn't realize is that the Internet is just one tool. And, they probably lacked a strategy. No matter how many products you put up on the Internet, they are simply just up on a screen. That's because in most cases, customers bought products after they touch them with their hands and check them out.

## Japanese Companies Falling Behind and a Lack of Human Talent

— Amidst these tremendous changes, how do you view the current world business environment?

Unfortunately, the current situation in Japan and South Korea, among other countries, is that there is a lack of human talent to bring to life strategies that use the Internet to improve company sales. Also, companies are making massive investments in preparing IT infrastructure, so this situation leaves them with unending problems.

What companies need is, simply put, human talent to create e-business strategy. Essentially, they need to gain the capacity to make use of IT resources for marketing and management.

It's generally thought that there is little marketing consciousness among employees in Japanese and South Korean companies. This is because the base of their thinking about salary is the equitable distribution of profits, which they can receive through the salary they earn for their day-to-day work. But, the US is different. There is constant, heavy pressure regarding the amount of work that is done and how much your job actually contributed to the company. There are almost no departments devoted solely to marketing in US companies. All the employees already have this mindset, which makes these departments unnecessary. US companies are of the mind to think about how they can improve profitability even if the economy takes a turn for the worse, so they always have the potential to move forward. This is why it is difficult for Japanese and South Korean companies to match with them. There are many companies in Japan and South Korea, including large ones, that mistake sales, advertising and branding as marketing. That's why it is currently only companies in the US that have succeeded as IT companies in using the Internet for business. There are companies that have received that type of acclaim domestically in Japan and South Korea, but they have just rode the e-business wave that has occurred due to the advancement of infrastructure and have succeeded through a money game-type speculation. Incidentally, there are also no companies in Europe that have succeeded in e-business. This is due to the major delays in the spread of the Internet.

## Becoming a Specialized Graduate School to Dominate in Asia

— In this business environment, what kind of features should KCGI hammer out; what should we aim for?

There are not many graduate schools that specialize in IT. Also, Kyoto Computer Gakuin is in the ancestry of KCGI. This is our biggest benefit. Moreover, KCGI has a great assortment of faculty who have specialized skills and knowledge, and who have worked for major corporations. In my lectures, I try to speak not just about my success stories, but also about my failures. That's because failures often teach much more than successes.

This is how I train the human talent that will really be needed in this era. The educational network with universities in other countries is also expanding year after year. The field isn't just limited to Japan. I would like KCGI to be a specialized graduate school that can contribute to the training of human talent capable of working in Asia and on the global stage.

Professor 内藤 昭三

# Shozo Naito



Former Head Researcher, Information & Distribution Platform Laboratory, Nippon Telegraph and Telephone Company  
Director, Cyber Kyoto Laboratory

**Professor Shozo Naito worked for Nippon Telegraph and Telephone Corporation (now NTT) as the Head Researcher in the Information & Distribution Platform Laboratory. He is a specialist in networks and information security. Professor Naito spoke with us about the current state of networks and cybersecurity in Japan and the world, along with related issues, in view of the COVID-19 pandemic.**

## Japan Must Move Toward Promoting Digitalization

— The COVID-19 pandemic has spurred society to embrace digitalization and use of IT. The launch of a "digital agency," slated for September 2021, should accelerate this trend.

Just like the physical world, cyberspace is full of viruses, with new strains emerging seemingly every day. Mutations happen in the physical world, too, of course, and we try to respond by adapting our ways of living. In some ways Japan's digitalization has fallen behind the rest of the world. At last, however, remote working has begun to catch on. Recently guided by the approach of digital transformation (DX: the transformation of people's lives through the pervasion of digital technology; radical innovation that fundamentally overturns existing senses of value and frameworks), moves to advance digitalization are quickening in a wide variety of ways. Japan's national government appears to be moving forward with the establishment of a digital agency. I believe this is an essential direction for the private sector to take as well. The business world must grasp the risk presented by the COVID-19 pandemic and turn it into opportunity.

Naturally, however, increasing dependency on networks heightens the risks to security. Networking and security complement each other like the wheels of a car. Maintaining the balance between these two aspects is a duty we must keep in mind at all times. In the academic world, we use Zoom regularly for lectures and classes. In the private sector, online conferencing systems with stronger security are being introduced. Similarly, in account authentication, the question of how thoroughly to verify account holders must be reconciled with individuals' need for privacy. It is important to choose solutions that strike a balance between doing the things we want and the level of security we need. In order to promote digitalization, we need to keep in mind the balance between networking and security at all times.

## The controversy on how far we can counterattack when cyberattacks occur

— Cyberattacks are on the rise worldwide. And they are growing ever more dangerous.

It's rumored that Russia was involved in the 2016 presidential election in the United States. Some countries are responding to the emergence of space and cyberspace as the fourth and fifth battlespaces, after the traditional ones of land, sea and air, by establishing space forces and cyber forces. Clearly we need to strengthen our responses to cyberattacks. But how far should we go to defend ourselves? An international consensus is needed on this question. Current topics of debate include: How far can a country go in counterattacking in response to cyberattacks, in the same way as one attacks enemy missile bases in response to a missile attack? How severely can we attack sites that attack us? A missile base may be located in one's own country, but a cyberattack could come from anywhere. The server used in a cyberattack could easily be located outside Japan. We need to possess the technology to cope with such threats. Going forward, society needs to have conversations to determine which methods of counteracting cyberattacks are most effective.

Cyberattacks happen not only government-to-government but at the private-sector level too. Many assets, after all, are located on the internet. Money changes hands online, with transactions beginning as virtual currencies and proceeding through digital currencies and digital settlement protocols. Information on shares and real estate is also available as electronic data. Japanese companies hold a great deal of information on intellectual property, and malevolent actors have their sights on it. Large companies are constantly bombarded by cyberattacks. While there is no such thing as perfect security, companies must prepare measures to counter these threats.

## Information on a network is basically visible

— We ordinary citizens are also under constant threat from cyberattacks and cybertheft.

We love using electronic settlement, electronic money and so on because they are so convenient, but at the same time we must maintain constant vigilance with them, given the ease with which they can be hacked. The flip side of the convenient features of apps and so forth is the need to remain mindful of the security traps and hidden dangers they entail. Using a nearby free WiFi connection to go online, for example, leaves us vulnerable to eavesdropping or hacking. Basically all information on a network is visible and thus exposed to potential eavesdropping or monitoring. When you send information, you must assume that somebody is looking at it. Whenever you access a network in ways having to do with your financial accounts or revealing personal information, keep in mind the question, "Will I be all right if somebody sees this?" For example, before you send information, ask yourself if you have encrypted it correctly. It's not easy, but it's vital to remember to do this step each time. Technology plays a part in these security measures, of course, but in the end there is no substitute for awareness and prudence.



Professor ニッツァ・メラス

# Nitza Melas



Cirque du Soleil Main vocalist,  
singer/songwriter

***Nitza Melas is a singer/songwriter from Montreal, Canada who thrills audiences around the world in multiple languages. She was selected for the prestigious position of lead vocalist with Cirque du Soleil, an entertainment troupe that performs circuses and musicals in countries the world over. Prof. Melas is unique, as she is the only singer who writes her own songs and performs them in shows with Cirque du Soleil. Unaffiliated with any record label, Prof. Melas not only sings and composes but also handles graphic design, promotion and sales.***

## Message

At KCG Group, students do more than just accumulating knowledge. A KCG education is an opportunity to acquire powerful tools for burnishing artistic and technical knowledge that can be applied to many aspects of the business world. Advances in expressive techniques such as projection mapping are stoking demand for information processing engineers who can work with the fine arts, leading to original expressions that far exceed audience expectations. KCG Group is on the front lines of this area of study, furnishing a learning environment in which students can reach achievements they never thought possible.



Prof. Nitza Melas and student choir at concert to announce MUΣA, the KCG Group's 50th anniversary CD (Great Hall, Kyoto Ekimae Satellite Campus, KCGI)

## IT entertainment produced by professionals and students in collaboration

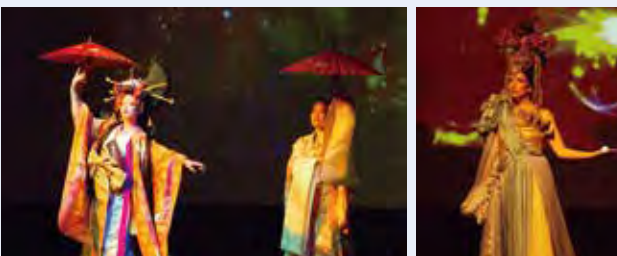
Today boldly original productions using IT are being explored in genres from drama and opera to dance performance. KCGI offers lectures on "IT in the Performing Arts," open to interested students in all departments, to train individuals for careers in related fields. Instruction is offered by Prof. Nitza Melas, main vocalist for Cirque du Soleil, and Cyril Koshyk, a VFX artist active in Hollywood. Attending students participate in the MUΣA Project (pronounced "Musa"), a compilation of their artistic contributions. Students plan, produce and perform concerts and produce movies by recording video, creating visual effects and using synthesizing software.

In October 2019, music composed and controlled by computer was performed in the MUΣA Live Show, in the main hall of KCGI's Kyoto Ekimae Satellite Campus. Prof. Koshyk directed a real-time, interactive performance using 3DCG, powered by the latest ICT, while Prof. Melas performed newly written songs. The result was a captivating show with spellbinding visual effects. Earlier, in October 2014, techniques such as projection mapping were introduced. At the MUΣA Live Show held on January 2016, images were projected onto the entire hall in a dynamic presentation. At the October 2019 show, audiences thrilled to a collaboration between stage performance and CG video.

In November 2023, a new type of show was presented, featuring Professor Kyoko Tagawa, a pianist. Profs. Melas and Tagawa delivered a recital in which students under their instruction presented an otherworldly light show in sync with the music.



Prof. Nitza Melas collaborates with a wide range of artists active in North America, creating stage scenes of unprecedented creativity.



# Faculty Introduction

*At KCGI, there are less than 10 students per faculty member.*

In order to achieve our goal of cultivating leaders who will flourish in the global IT business scene, KCGI's faculty, assembled from around the world, is composed of world-class authorities in the fields of informatics, business administration, and pedagogy, together with practically experienced experts who have planned and executed IT strategies at major companies.

## Fundamental Mission of Faculty

KCGI has prepared an environment where each student can study as is appropriate to his or her future aspirations with the advice of faculty members.

KCGI faculty play two very important roles. First, KCGI faculty play the role of educational resources. For students, faculty members are one of the educational resources. Students can learn the information necessary to achieve their goals from faculty members. The second role KCGI faculty play is as study coordinators. Faculty members plan and solidify the study process in order to facilitate students' understanding of study content. Linking students with various study resources is the role which faculty members execute as study coordinators.

We at KCGI believe that it is the mission of our faculty to fulfill these roles and provide maximum support so that each student may achieve his or her study goals.

## Vice Presidents / Professors



### Shigeru Eiho

Bachelor of Engineering from Kyoto University  
Doctor of Engineering from Kyoto University  
Professor emeritus at Kyoto University  
Former President of the Institute of Systems, Control and Information Engineers  
Councilor of the Institute of Systems, Control and Information Engineers  
Supervisor of Japanese Society of Medical Imaging Technology (JAMIT)  
Fellow at the Institute of Electronics, Information and Communication Engineers



### Gary Hoichi Tsuchimochi

Bachelor of Arts and Master of Arts, California State University (USA) Doctor of Education (Ed. D.) Columbia University, USA:  
Doctor of Education, University of Tokyo  
Guest Professor, Department of Education, University of Victoria (Canada)  
Guest Research Fellow, Mark T. Orr Center for Japanese Studies, University of South Florida  
Guest Professor, Center for the Studies of Higher Education, Nagoya University  
Examining Professor, Ministry of Education, Culture, Sports, Science and Technology (MEXT) University Establishment Council  
Examining Professor, MEXT Graduate School Establishment Council  
Former Professor, 21st Century Education Center, Hiroshima University  
Former Director, Higher Education Development Center and Former Director, Learning and Research Support Center, Teikyo University



### Michihiko Minoh

Bachelor of Engineering, completed doctoral program in Informatics and Doctor of Engineering, Kyoto University  
Professor Emeritus, former Vice President, former Assistant Manager of President's Office, former Manager of Institute for Information Management and Communication and former Director of Academic Information Media Center, Kyoto University  
Former President of RIKEN and former Director of RIKEN Information R&D and Strategy Headquarters (R-IH), RIKEN  
Former science official at Research Promotion Bureau and former Chair of Information Committee of Science and Technology Council, MEXT  
Group Leader, Distributed Coordinated Media Group, Information and Communication Division, National Institute of Information and Communications Technology (NICT)  
Former Chair of Information and Systems Society and Chair of HCG Group Committee, Institute of Electronics, Information and Communication Engineers (IEICE)  
Guardian Robot Project Director, R-IH, RIKEN  
Cooperating Member, Science Council of Japan, 2026-27

## Director, Sapporo Satellite / Professor



### Masaki Nakamura

Bachelor of Economics from Aoyama Gakuin University  
After working at Nihon Unisys, Ltd., he established dGIC Inc. in 1987.  
He is the president-director of the company.  
Chief Director of Hokkaido Computer-related Industrial Health Insurance Union  
Chairman of Hokkaido Information system Industry Association  
Chairman of All Nippon Information Industry Association Federation

## Director, Tokyo Satellite / Professor



### Hisaya Tanaka

Bachelor of Engineering from Waseda University  
Former Acting Manager of System Support Division, Fujitsu Limited  
Former Director of Fujitsu University  
Former Executive Director and Manager of IT Human Resource Development Headquarters, Information-technology Promotion Agency  
Certified as a senior educator by Japan Society for Engineering Education  
Member of Project Planning Committee, Japan Society for Engineering Education  
Board Member of Mitou Foundation

## President Emeritus / Professor



### Toshihide Ibaraki

Bachelor of Engineering, Kyoto University, Doctor of Engineering, Kyoto University (major in Electronic Engineering)  
Professor Emeritus, Kyoto University  
Former Dean of the Graduate School of Informatics, Kyoto University  
Former professor, Toyohashi University of Technology  
Former Professor, Kwansei Gakuin University  
President of The Kyoto College of Graduate Studies for Informatics (2010-2023)

Learn more about KCGI  
faculty members here.





# Hyakumanben Main Campus



Design based on  
the latest educational  
theory

A new school building was erected and added to the Hyakumanben Campus of the Kyoto Head School in summer 2022. The new facility in Japan's ancient capital of scholarship is used widely as KCGI's new hub of IT education and international exchange. With the addition of the new building and its grounds, Hyakumanben Campus tripled in area. Comprising four stories above ground and one below, the new building provides a forum for advanced, revolutionary and global education, backed by KCGI's extensive experience and theoretical understanding.



## Large Lecture Hall

The large lecture hall can be used for multiple purposes, including not only lectures but also conferences, concerts, plays, film screenings and more. The hall seats up to 200 people.



## Library



## Hy-flex Classrooms

Hy-Flex (Hybrid-Flexible) classrooms are designed to provide flexible support for a wide range of lesson modes. They support active learning, in which students participate actively as the main actors in the lesson, through groupwork and other strategies. They are also ideal for hybrid lessons, combining in-person and online instruction.



## Training Rooms



## Innovation Room

The innovation room is a space where students and instructors from divergent fields can meet and spark innovation through discussion, public presentations and other activities. The room is designed to inspire creativity. As in the hy-flex classrooms, every wall in the innovation room, from floor to ceiling, can be used as a whiteboard.



## Work Booths for Individual Study

Outfitted with highly effective soundproofing, the booths provide a comfortable environment for communicating with people at remote locations.





# Campuses

## Kyoto Main School

Kyoto Main School consists of two campuses. The diverse student population of these campuses conducts a wide range of study and research in pursuit of a Masters in Information Technology, the highest academic degree in the field of applied IT. Travel between the two campuses is available via a free shuttle bus.

### Hyakumanben Campus, Sakyo-ku, Kyoto

Hyakumanben Campus was born as a center for education and research with the opening of KCGI in 2004. In 2022, the site was expanded and a new school building (Main Building) was completed, providing a enhanced educational environment in which a majority of KCGI's classes are now held. Located close to Kyoto University, the Hyakumanben site lies in the heart of Kyoto's student district, an area redolent with passion for scholarship and freedom of thought.



### Kyoto Ekimae Satellite, Minami-ku, Kyoto

The Kyoto Ekimae Satellite was completed in the spring of 2005. Standing adjacent to Kyoto Station, a commuting hub transited by large numbers of commuters, this campus is exceptionally conveniently located. Illuminated by its bright, open exterior, Kyoto Ekimae Satellite is equipped with a state-of-the-art e-learning studio, enabling numerous lectures to be distributed internationally from this location. Together with the nearby Kyoto Ekimae Campus of KCG, the Kyoto Ekimae Satellite functions as a major hub of leading-edge IT education.



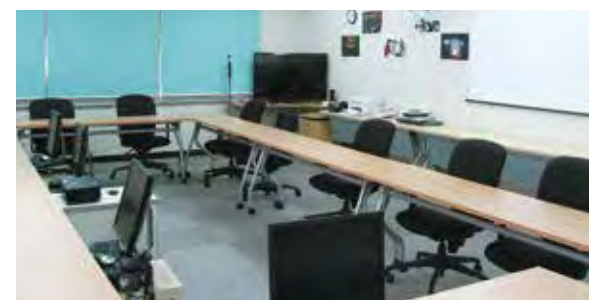
## Satellite Campuses

Like the main campus, the satellite campuses attract a diverse mix of students, including people already in the working world. The satellite campuses are connected to Kyoto Main Campus not only by dispatch classes (classes taught by instructors visiting from the main campus) but also by the latest e-learning systems, which link to the main campus in real time. Learning using prerecorded video is also provided. Moreover, each satellite's dedicated instructors provide vital study backup, to help each student achieve his or her goals.

### Sapporo Satellite Located inside dGIC Inc.

In April 2012 the Sapporo Satellite Campus opened in Sapporo, in the heart of Japan's vast northern prefecture of Hokkaido. This campus was the first KCG Group facility located outside of Kyoto.

All of the dedicated instructors at the Sapporo Satellite Campus are currently active on the front lines of the IT industry. In Current Issues in IT Industry, instructors interweave the latest industry information with tales from their own experiences, providing clear explanations of the knowledge, skills and communication abilities that will be needed in the IT business of the near future.



### Tokyo Satellite Located inside Hitomedia, Inc.

Tokyo Satellite is situated in a location close to Roppongi Hills in Minato City, Tokyo. The Tokyo Satellite opened in October 2012 as the second location following the Sapporo Satellite.

Many of the instructors at the Tokyo Satellite are active players on the front lines of the accelerating digitalization of today's society. For this reason, the IT training and classes in logical thinking disseminated by the Tokyo Satellite are a perennial favorite with students, including students at the Kyoto Main Campus. The education provided at the Tokyo Satellite contributes greatly to the cultivation of top leaders in applied IT who can play a vital part on the world stage.



## Steps Toward Acquiring a Professional Degree

For students who enroll in the spring term or who start their master project in the third semester

### First-year students First semester

1

#### Intensive study of basic knowledge

- School entrance ceremony/New-student orientation/Academic consultation
- Regular spring examinations
- Summer intensive classes

#### A fulfilling student life

- Welcoming ceremony for new students
- Internship at an overseas partner university (guest lecturer)
- Business internship with a private company
- Concerts • Career counseling



School entrance ceremony

### First-year students Second semester

2

#### Acquisition of highly specialized knowledge Start preparing your Master Project

- Start of preparations for Master Project
- Regular fall examinations
- Spring intensive classes
- Special lectures by renowned Japanese and foreign instructors

#### A fulfilling student life

- Career guidance
- Various job-search assistance classes
- November Festival



Instruction in preparing for a master project

### Second-year students Third semester

3

#### Study of practical and more advanced subjects Start working on your Master Project

- Start of work on your Master Project
- Regular spring examinations
- Summer intensive classes

#### A fulfilling student life

- On-campus presentations by private companies
- Acquisition of various qualifications
- Internship at an overseas partner university (guest lecturer)
- Concerts • Participation in various contests



Summer intensive classes. Deepen exchanges with the teachers through the Coffee Hour.

### Second-year students Fourth semester

4

#### Activities and study to enhance specialization Completion of theme for Master Project

- Interview on Master Project by oral presentation
- Special lectures by renowned Japanese and foreign instructors
- KCG Awards (Announcement of most outstanding projects at KCG and KCGI)
- Degree conferment ceremony

#### A fulfilling student life

- Degree completion celebrations



KCG Awards



# Kyoto, the city for students

Kyoto has history more than 1200 years. It was once the capital city of Japan and is still the cultural heartland of Japan. It is also an international city and many young students live in the city. KCG campuses are located in the convenient areas and you can access them from every area of Kyoto city. In addition, they are easy to reach from other places in the Kansai region such as Osaka, Nara, Kobe, and Otsu.

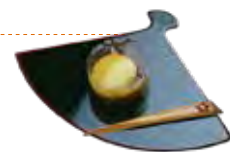


## Surrounding Area of KCGI Hyakumanben Campus, Kyoto Main School

There are many spots such as Ginkaku-ji Temple, which is a representative temple of the Muromachi culture, Heian Jingu Shrine, which is connected with Jidai Matsuri (one of the three biggest festivals in Kyoto), Tetsugaku-no-michi, known for its cherry blossom trees, Kyoto City Zoo, the second oldest zoo in Japan, and Kyoto City KYOCERA Museum of Art are in this area (among many other spots). It is easy to come in touch with Japanese culture and history in this location!

### Spot

Ginkakuji	Kyoto City Zoo
Tetsugaku-no-michi (Philosopher's Walk)	Heian Jingu Shrine
Nanzenji Temple	Eikando Zenrin-ji
Kyoto City KYOCERA Museum of Art	Chionji Temple
	National Museum of Modern Arts



## Surrounding Area of KCG Rakuho Campus

It is convenient to go to Rakuho area, from the center of Kyoto and Kyoto Station by the subway and the city bus from the Kitaoji subway station and bus terminal near Rakuho Campus. Kamigamo Shrine is near, Kitayama Street lined with modern buildings, and we can enjoy nature at the botanical garden, Midoroga-ike Pond, and Kamo River.

### Spot

Kamigamo Shrine	Kyoto Botanical Garden
Midoroga-ike Pond (also called Mizoroga-ike Pond)	Kitayama Street

## Surrounding Area of KCGI Kyoto Ekimae Satellite Campus

Kyoto Station, where the JR, Kintetsu, and city subway lines run, is a doorway to Kyoto that a lot of people visit from the all over Japan. Both modern buildings and historical buildings coexist in this area, and we can feel a contrastive atmosphere.

### Spot

Toji	Sanjusangendo
Nishi Hongwanji Temple	Kyoto National Museum
Higashi Honganji Temple	Kyoto Station Building
Tofukuji Temple	Kyoto Aquarium
Kyoto Tower	



## Surrounding Area of KCG Kamogawa Campus

Shimogamo Shrine, related with Aoi Matsuri, which is one of the three biggest festivals in Kyoto, and the Imperial Palace in Kyoto are near the campus. This is an area rich in nature.

### Spot

Shimogamo Shrine	Tadasu no Mori (shrine forest)
Imperial Palace in Kyoto	Kyoto City Historical Museum





# kcg.edu Education Network

The Kyoto College of Graduate Studies for Informatics aims to realize world-class, high level IT education as a global education institution and as a leader in IT education while creating a close network with other KCG Group education institutions and collaborating with governments and universities overseas.

The Rochester Institute of Technology is an engineering university founded in 1829 which is famous as one of the first universities in the entire United States to establish IT courses (1991). The university boasts the top results in the United States in the fields of computer graphics, games and IT. RIT has a sister school agreement with the Kyoto Computer Gakuin in 1996.

Boasting over 60 years of tradition and achievements as Japan's first computer education institution, established in 1963, the Kyoto Computer Gakuin has created the largest personal network in Japan's information industry with over 50,000 graduates.

The Kyoto Computer Gakuin Automobile School fosters automotive mechanics with advanced techniques and knowledge in IT and networking applicable to next-generation automotive technologies.

The Kyoto Japanese Language Training Center, a Japanese language education facility, is accredited by the Minister of Justice and has received designation as a Japanese language institute for students without 12 years of education in their country from the Ministry of Education, Culture, Sports, Science and Technology.

The New York Office was established in 2000 in the New York World Trade Center as a base for the KCG Group's overseas operations. Although affected by the simultaneous terrorist attacks on the United States on September 11, the New York Office is now located in Rockefeller Center and has resumed its activities.

The KCG Beijing Office was established in 2002 within the National Library of China in Beijing as a base for exchange with China's universities, with which KCG is strengthening its relationships. KCG opened the KCG Dalian Office in 2008 and the KCG Shanghai Office in 2018, through which it provides IT educational support to Chinese universities, among other activities.

## Overview of KCGI

**Name:** The Kyoto College of Graduate Studies for Informatics

**Parent organization:** The University of Informatics

**Address:** 7 Tanakamonzen-cho, Sakyo-ku, Kyoto 606-8225, Japan

**Graduate school:** School of Applied Information Technology

**Major:** Web Business Technology Program

**Credits required for completion:** 44

**Number of students admitted:** 1,000 (Total capacity is 1,880 persons.)

**Course term:** 2 years

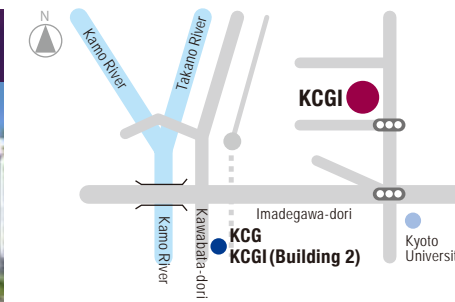
**Degree:** Master of Science in Information Technology (M.S. in IT)

URL: <https://en.kcg.edu>

## KYOTO



Numerous IT companies, leaders of Japanese industry, are located in Japan's center of traditional culture, Kyoto, including Rohm, Murata Manufacturing, Nintendo, Horiba, Kyocera, Nidec, and Omron. Many Nobel Prize winners were also born in Kyoto. KCGI aims to take in the fantastic energy which Kyoto produces and bring it into the classroom.

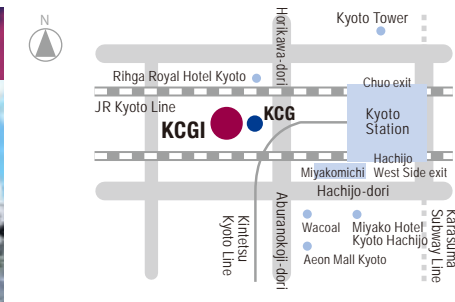


### Address

7 Tanakamonzen-cho, Sakyo-ku, Kyoto, 606-8225, Japan

### Access

- 1 minute walk north from the Hyakumanben intersection
- 8 minute walk from Demachiyanagi Station; take the Keihan Electric Railway or the Eizan Electric Railway
- Take the No. 7 bus from Kyoto Station, get off at "Hyakumanben" or take the No. 206 bus and get off at "Asukaicho"

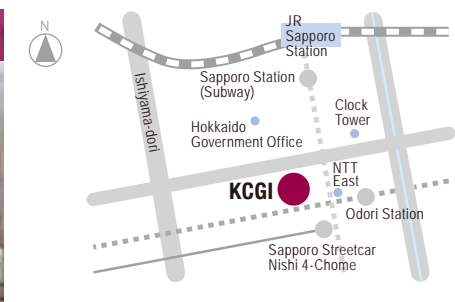


### Address

10-5 Nishikujoteranomae-cho, Minami-ku, Kyoto, 601-8407, Japan

### Access

- 7 minute walk west from Hachijo West Side exit of Kyoto Station

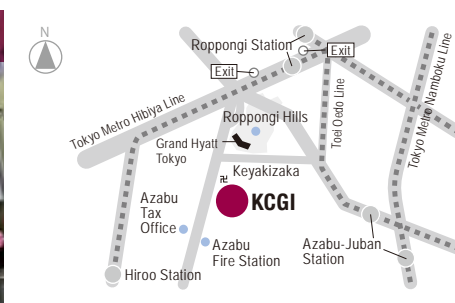


### Address

Daigo Building 7th floor (inside dGIC Inc.), 5-11 Odorinishi, Chuo-ku, Sapporo, 060-0042, Japan

### Access

- 1 minute walk north from exit no. 2 of Odori Station.



### Address

VORT Motoazabu 4th floor (inside Hitomedia, Inc.) 3-1-35 Motoazabu, Minato-ku, Tokyo, 106-0046, Japan

### Access

- 8 minute walk from exit 1A of Roppongi Station on the Tokyo Metro Hibiya Line
- 10 minute walk from exit 3 of Roppongi Station on the Toei Oedo Line