Graduate School of Applied Informatics
University of Hyogo

Preparing Information Risk Specialists for Real World Challenges

∼Study in Japan and the USA∼
Dual-Degree Program
with Carnegie Mellon University

(in Applied Informatics and Information Security)

The Graduate School of Applied Informatics (GSAI), University of Hyogo launched the High Confidence Informatics (HCI) Track in April, 2011. This track offers a Dual-Degree Program in conjunction with Carnegie Mellon University (CMU) in the USA. This program enables students to obtain two master's degrees, one from University of Hyogo (in Applied Informatics) and the other from CMU (in Information Technology – Information Security), over a period of two years.

Goals of the HCI Track

● There is a growing social demand for secure and dependable ICT systems. Training of professionals to meet this demand is the goal of the High Confidence Informatics Track via teaching and research.
● This track offers opportunities for practical research that will positively impact quality of life in relation to use of IT systems. Subject areas covered fundamentals of networking and related ICTs, economics of IT systems, research methods and reliability and security of ICTs. Issues about security and confidence in information systems found in governments, companies and healthcare organizations will also be covered.
● The Dual-Degree Program in collaboration with Carnegie Mellon University is offered as an option within the HCI Track. Students can thus take advantage of world-class training in information security theory and technologies offered at CMU.

Graduate School of Applied Informatics Department of Applied Informatics

High Confidence Informatics Track

Dual-Degree Program option in conjunction with CMU

Policy and Management Informatics Track

Healthcare Informatics Track

University of Hyogo

Dual-Degree Program with Carnegie Mellon University (CMU)

Carnegie Mellon University offers some of the world's highest level of research and education in information security through interdisciplinary research institutes*. Through the Dual-Degree Program, students can obtain a master's degree from CMU in addition to the Master of Applied Informatics from University of Hyogo.

＊CMU is renowned for its CERT/CC (Computer Emergency Response Team/ Coordination Center), that publishes latest security bulletins to the world.

● **Degrees earned:**

University of Hyogo	Master of Applied Informatics
CMU	MSIT-IS (Master of Science in Information Technology – Information Security)

● **Program duration** : two years

● **Applications :** December 2012 (tentative)

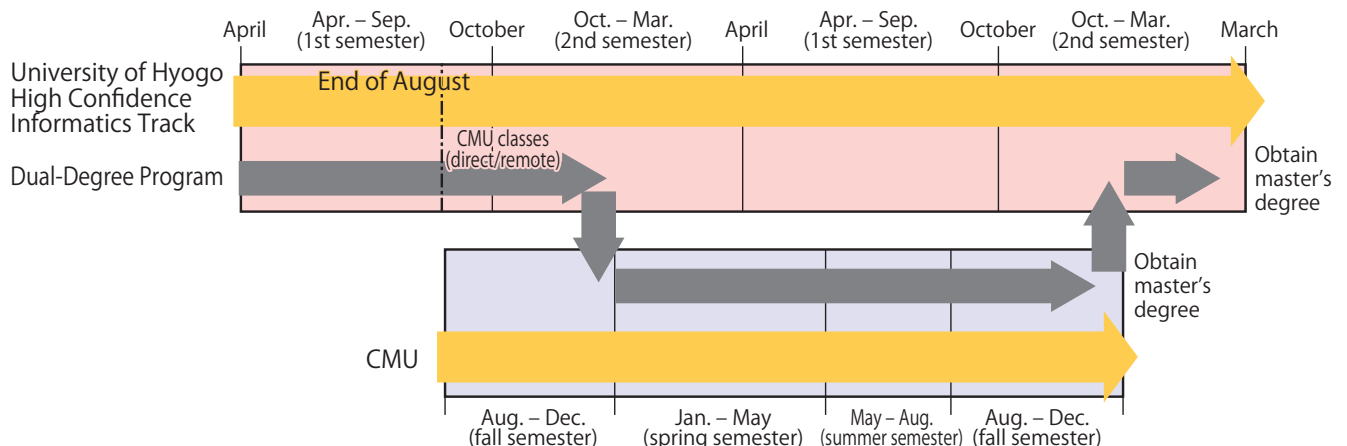Applications will be evaluated by both CMU and University of Hyogo.

● **Application documents to be submitted:**

Application forms, GRE General Test score, TOEFL official score, statement of purpose, and three letters of recommendation, etc. (to be determined)

● **Program schedule**

Students study for the first nine months (April - December) at the Graduate School of Applied Informatics of University of Hyogo in Kobe, Japan. Then they move to Pittsburgh, USA to study at CMU for one year (January - December). Finally, they return to University of Hyogo and study for three months (January - March). They will get two master's degrees over the course of two years. (Shown below is the schedule for students entering in April, 2013)

	GSAI, University of Hyogo	CMU
April 2013	Enter University of Hyogo, Kobe (Take first-semester classes)	
August 2013 –	(Take CMU fall semester classes taught remotely in Kobe)	
January 2014 –		Move to Pittsburgh (Take CMU spring semester classes)
May 2014 –		(MSIT-IS Project)
August 2014 –		(Take CMU fall semester classes)
January 2015 –	Return to GSAI (Submit Master's thesis to GSAI)	Conferral of CMU Master's Degree
March 2015	Conferral of University of Hyogo Master's Degree	

● Class delivery

GSAI, University of Hyogo	CMU
Classes at GSAI for the dual-degree option students will be conducted in English. Students who so wish, may also register for any of the classes conducted in Japanese at GSAI. CMU classes will be given in English by faculty at University of Hyogo who have received the status of adjunct faculty from CMU. Some lectures will use video teleconference from CMU.	Lectures by CMU faculty will be given in English.

● Classes (tentative)

GSAI, University of Hyogo	CMU
Intro to Information Security (CMU, video teleconference), Basics of Modern Cryptography (CMU), Fundamentals of Telecommunication Networks (CMU, video teleconference), Telecommunications Management (CMU), Secure Systems, Cloud Computing, Economic Analysis (CMU), Master's thesis, etc.	Applied Info Assurance, Information Security Risk Analysis, Information Security Risk Policy and Management, Statistics for IT Managers, Decision Making under Uncertainty, Master's Project, etc.

● Credits required for a master's degree

GSAI, University of Hyogo	CMU
At least 30 credits in total (core programs: 12 or more (made up by fundamental: 8 or more and advanced: 4 or more); major programs: 14 or more) and students must pass the defense of their Master's thesis. ※Up to 10 credits obtained at CMU can be transferred.	At least 144 units in total (Core Course Requirements: 60; Electives: 48; MSIT-IS Project: 36). ※ Three units at CMU are equivalent to a credit at University of Hyogo.

● Financial information

GSAI, University of Hyogo	CMU
Admission fee: ¥282,000 or ¥423,000 Tuition: ¥267,900 /semester (¥535,800 /year)	Tuition: US$18,900 /semester (US$56,700/year) Enrollment registration fee: US$100 (at enrollment) Fees & Costs: about US$1,500 /year

※To complete the Dual-Degree Program, students are required to pay the total amount above.

● Scholarships

Two competitive scholarship programs have been established to cover CMU tuition: one is a grant system and the other is an interest free loan system.

● Language requirements

Students should have a good command of English to understand lectures at American graduate school.
Therefore, they are required to submit determined levels of TOEFL and GRE General Test scores during application.

ACCESS MAP
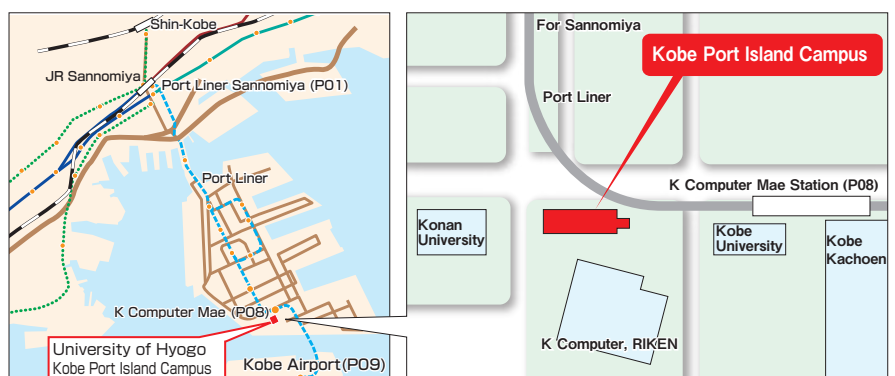
●JR, Hankyu Line, Hanshin Line: Sannomiya Station
→ Port Liner: K Computer Mae Station → Three minute walk

Outline of the High Confidence Informatics Track

Students take the High Confidence Informatics Track with the aim of obtaining a master's degree from University of Hyogo only, that is, choose not to participate in the Dual-Degree Program with CMU. For more information, please contact us.

○**Standard Course Duration :** two years
○**Maximum enrollment :** 40 (together with the Policy and Management Informatics Track and the Healthcare Informatics Track)
○**Degree :** Master of Applied Informatics
○**Class structure and completion requirements :**
　To complete the Master's course, students must have more than thirty credits, fulfilling the required number in each program as shown in the table below and pass the examination for the Master's thesis on special research.

Core Program (Fundamental & Advanced) – Common to three tracks

Students will be provided with the most current knowledge and a set of skills necessary for effectively participating in the use of high confidence informatics in the fields of policy and management, and healthcare.
The curriculum is prepared for students who do not have a background in informatics, policy, management, medical care and nursing.

Fundamental (8 credits or more):

Required:	Basic Informatics	Practicum in Information Processing I	Basic Data Analysis
Required elective:	Basic Policy Science	Basic Business Management	Basic Healthcare Science

+

Advanced (4 credits or more):

Required elective:	Information Science	Data Analysis	Database Systems	Computer and Communication Network Systems
Required elective:	Policy Science	Business Management		Healthcare Science

Major Program for the High Confidence Informatics Track (to be determined) (14 credits or more)

Students learn how to collect, analyze and evaluate information, how to apply it to the field of their needs or interests, and how to design information systems to meet specific goals. CMU Programs will be conducted in English.

Required:	Internship in High Confidence Informatics	Study in Applied Informatics I	Study in Applied Informatics II

Required elective:

Practicum in Information Processing II	Intro to Information Security (CMU)
Practicum in Information Processing III	Basics of Modern Cryptography (CMU)
System Design	Fundamentals of Telecommunication Networks (CMU)
Data Mining	Telecommunications Management (CMU)
Economic Analysis (CMU)	Secure Systems
Disaster Management and Information	Data Communications Management
Medical Economics and Management	Human Machine Systems
High Confidence Systems	Intelligent Computing
Introduction to Information Security	Cloud Computing
Risk Management	Open Source Softwares
Topics in Applied Informatics I	Cyber Physical Systems
Project Research I – IV	

Graduate School of Applied Informatics, University of Hyogo

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