Graduate School of Applied Informatics
University of Hyogo

Preparing Information Risk Specialists for Real World Challenges

～Learn in Japan and the USA～
Dual-Degree Program with Carnegie Mellon University

(commencing in April, 2011)

The Graduate School of Applied Informatics, University of Hyogo launched the High Confidence Informatics Course in April 2011. This course 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 and the other from CMU, over a course of two years.

Goals

- 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 Course via teaching and research.
- This course offers practical research that will positively impact quality of life and risk management. Subject areas covered include issues needed to security and confidence in actual information systems found in governments, companies and healthcare organizations. Fundamental technologies for information security and network security will also be covered.
- This course also offers the Dual-Degree Program in collaboration with Carnegie Mellon University (CMU) in the USA. 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 Course (April, 2011)
  - Dual-Degree Program with CMU
- Policy and Management Informatics Course (existing)
- Healthcare Informatics Course (existing)

University of Hyogo

Dual-Degree Program with Carnegie Mellon University (CMU)

Carnegie Mellon University conducts 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 2011 (tentative)

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

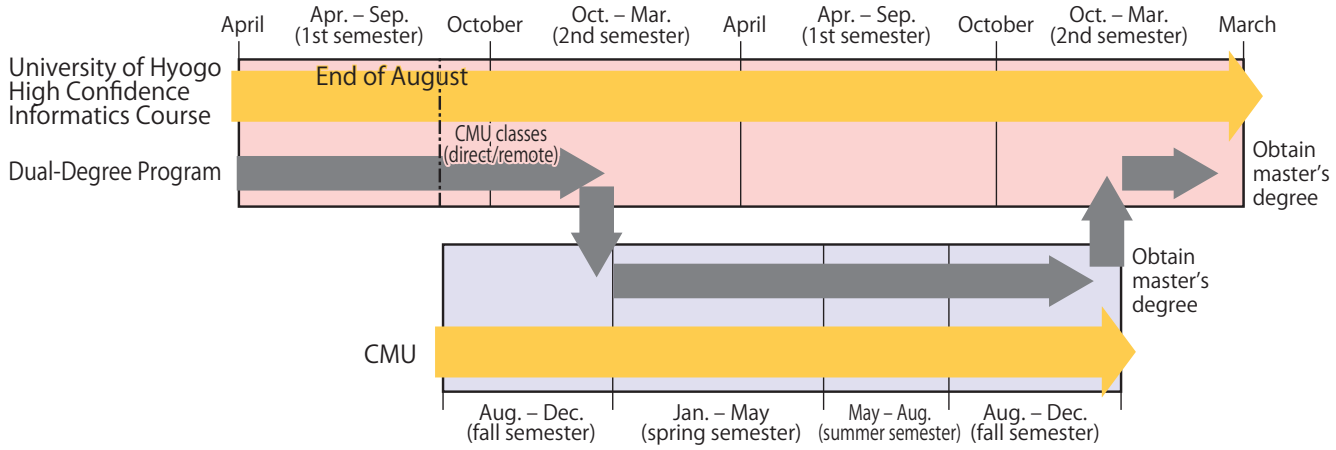
Application documents:

Application forms, GRE General Test score, TOEFL official score, statement of purpose, 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. Then they move to Pittsburgh to study at CMU in the USA for one year (January – December). Finally, they will 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, 2012)

	University of Hyogo	CMU
April 2012	Enter University of Hyogo, Kobe (Take first-semester classes)	
August 2012 –	(Take CMU fall semester classes taught remotely in Kobe)	
January 2013 –		Move to Pittsburgh (Take CMU spring semester classes)
May 2013 –		(MSIT-IS Project)
August 2013 –		(Take CMU fall semester classes)
January 2014 –	Return to University of Hyogo (Submit Master's thesis to University of Hyogo)	Conferral of CMU Master's Degree
March 2014	Conferral of University of Hyogo Master's Degree	



Class delivery

University of Hyogo	CMU
Classes at University of Hyogo on high confident informatics will be given in Japanese. 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)

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

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

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

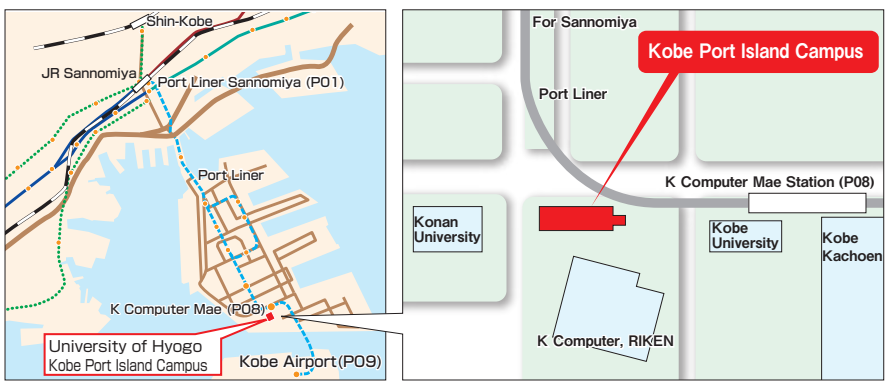
Two scholarship programs have been established to cover CMU tuition: one is a grant system and the other is a scholarship loan without interest.

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 Course

Students take the High Confidence Informatics Course 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 Course and the Healthcare Informatics Course)
○**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 courses

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

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

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