

Improving of Social and Economic Infrastructure

【Outline of University Program】

Learn the Development Technology Course of the Graduate School to study global viewpoints on the earth system and environmental science, and acquire local and practical development technology on drainage basins, ecosystems, architecture, cities and traffic.

In this process, Regional and Urban Engineering, Transportation Engineering, Transportation Planning, Tourism Policy, Grand Disaster Prevention Engineering, Architectural Prevention, Environment Simulator, Marine Hydrodynamics, Marine Environmental Conservation, Environmental Monitoring, Botany Resources for the Future and sustainable architecture are provided as special subjects.

In this program, while improving the environmental development education and the environmental management ability in the relevant country through such subjects, the students will learn individual problems for traffic network infrastructure improvement such as road management, construction of road networks and port administration through research guidance for a master's thesis. Then, aims to foster transportation administrators with the environmental management ability through the education research concerning the building of eco-friendly traffic transportation systems for sustainable urban development.

For further info, please refer page 6 of the Application Guideline.

Hiroshima University
Graduate School for International
Development and Cooperation

Sub-Program/ Component	Realization of Sustainable Economic Growth and a stable society/ Improving of Social and Economic Infrastructure (Improving of Social and Economic Infrastructure)
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1	University	Hiroshima University (National)
	Graduate School	Graduate School for International Development and Cooperation
	URL of University	http://www.hiroshima-u.ac.jp/index.html
	URL of Graduate School	http://www.hiroshima-u.ac.jp/en/idec/
	Program name	Special Program for Sustainable Development of Developing Countries Development Technology Course in Division of Development Science
	Degrees	a. Master of Science
		b. Master of Engineering
		c. Master of Agriculture
		d. Master of International Cooperation Studies
	Credit and years needed for graduation	a. 30 Credits, 2 Years
b. 30 Credits, 2 Years		
c. 30 Credits, 2 Years		
d. 30 Credits, 2 Years		

2 . Features of University

Hiroshima University (HU) was established by combining eight existing institutions in May 1949 under the National School Establishment Law. Later in 1953, the Hiroshima Prefectural Medical College was also added to the new HU. Some of these higher educational institutions already had brilliant traditions and histories of their own. Although these educational institutions suffered a great deal of damage due to the atomic bomb which was dropped on Hiroshima on August 6, 1945, they were reconstructed and combined to become the new HU. In addition, Graduate Schools were established in 1953. The new HU has risen from the ruins of war like a phoenix, which is in fact the University's symbol.

HU is located in the southwest part of *Honshu*, the largest island of Japan. Approximately 900 kilometers away from Tokyo, it takes 70 minutes by airplane, or 4 hours by *Shinkansen* (bullet train) to Hiroshima. HU has three campuses and the main campus, covering 252 hectares, is located in Higashi-Hiroshima, in a verdant area which is famous for sake (Japanese rice wine) brewing. Including campuses in Hiroshima, known as the International City of Peace and Culture, the University includes 11 faculties, 12 graduate schools, a research institute, a university hospital, and 11 affiliated schools.

HU aims to be a world-class hub of education and research, to foster excellent human resources to contribute to the community, and developmentally expand science.

HU's mission of ongoing growth is based on the following five guiding principles:

1. The Pursuit of Peace

To develop intellectual attitudes which always seek peaceful solutions to the problems affecting society and the world at large.

2. The Creation of New Forms of Knowledge

To evolve new systems of study which surpass existing frontiers of knowledge and encourage intellectual innovation.

3. The Nurturing of Well-Rounded Human Beings

To train graduates with well-developed and multifaceted personalities by means of an education which has breadth as well as depth.

4. Collaboration with the Local, Regional, and International Community

To create a university with a strong international awareness which can efficiently disseminate knowledge on a worldwide scale, in collaboration with local and regional communities.

5. Continuous Self-Development

To maintain a constant readiness to re-examine established ways of acting, and a constant openness to improvement and innovation.

3 . Features of Graduate School

The Graduate School for International Development and Cooperation (IDEC) was established in 1994 for the purpose of actively nurturing expertise in various challenging issues facing developing countries through research and education. IDEC is devoted to accomplishing its goals through a specified three-pillared approach: international environmental cooperation; international educational cooperation; and international peace cooperation. These three areas are intertwined and complement each other. Together, these can lead to advancements in developing countries.

IDEC has been accepting many international students. Most of them come from Asian and African countries. As of March 2011, IDEC has 1,655 alumni from 68 countries. The majority of our graduates has returned to their home countries and began their activities as highly competent professionals and researchers.

We have pragmatic features as follows.

1. Key Features of Education at IDEC

Education Programs in English

At IDEC, we believe it is important to develop international professionals capable of writing academic articles and reports, communicating and conversing in English. Therefore, most lectures and seminars are provided in English, and our well-organized curricula enable students to receive degrees through courses in English.

Systematic and Interdisciplinary Curriculum

IDEC offers a systematic and interdisciplinary curriculum to produce specialists who can contribute to international development and cooperation in ways that cut across established academic disciplines. IDEC offers integrated education and research programs in economic development, international affairs, cultural dynamics, engineering, biology, peace studies, educational development, regional studies, Asian cultures and interdisciplinary programs to develop global perspectives.

2. Special Education Programs

IDEC offers special education programs designed to improve the qualifications and skills of students who plan to work in the field of international cooperation. The main features of these programs are as follows.

Global Environmental Leader Education Program for Designing a Low-Carbon Society

One of our aims is to establish a center for training environmental leaders capable of identifying problems and formulating strategic solutions at national or local levels through interdisciplinary and international perspectives. The global issue of reducing carbon emissions is an example of such a problem and the need for solutions. Another aim is to provide a platform for collaboration between industry, government and academia to promote cutting-edge environmental research

and create coherent practical solutions for environmental issues on a global scale that is not limited to developing countries. We seek to provide value-added knowledge to those engaged in international cooperation. Achieving these aims requires addressing five areas: urban system design to prevent global warming, wise use of biomass resources, environmental impact assessment, policy and institutional design and environmental education. Our intention is for developing countries to work hand in hand with Japan to develop international environmental leaders, a task that we will undertake in an effective and practical manner.

For more details, refer to <http://hicec.hiroshima-u.ac.jp/en/>.

Formation of a Strategic Center for Global Internship (G.ecbo)

HU is currently promoting the “Formation of a Strategic Center for Global Internship” (commonly known as the “G.ecbo program”) following the 2007 adoption of the Support Program for Improvement of Graduate School Education. G.ecbo is a practical education program that includes pre- and post-internship training designed to achieve viable outcomes from student internships. The following types of internships are available:

- (1) overseas internships, in which students go to a university or organization outside Japan;
- (2) domestic internships, in which foreign students go to a Japanese company or organization;
- (3) third-country internships, in which students from developing countries go to institutions in other developing countries.

For more details, refer to <http://www.hiroshima-u.ac.jp/en/en-gecbo/>.

4 . Features of the Program

Developing countries today are facing various difficulties, including rapid population growth, regional conflicts, deteriorating standard of living and environmental problems. Insufficient social infrastructure, particularly in education and medical conditions and technological level, impedes socioeconomic development in developing countries.

Therefore, it is of the utmost urgency that we nurture young researchers and planners who are experts in their specialized areas and have willingness to contribute to international cooperation. Through its innovative educational program, the Graduate School for International Development and Cooperation (IDEC) aims to provide educational opportunities for students to learn about the interdisciplinary and practical subjects necessary for international development and cooperation, including economics, environmental science, engineering, ecology, agricultural science, pedagogy, sociology, international politics and peace science. The school as a gathering with international characters offers a special place where the students with different expertise from various countries with different cultural, social, educational, political, and economical backgrounds are able to foster closer ties each other and share the common agenda and goals in international development and cooperation. JDS fellows will belong to Development Technology Course in Division of Development Science.

[1] Division of Development Science

The Division of Development Science nurtures those specialists who contribute to creating sustainable society in developing countries in social, economic and environmental aspects, namely professionals for international institutions and aid-providing organizations, administrators and academic researchers. The division offers courses on various issues on economic development, socio-political and peace studies, environmental management, infrastructure planning and design, and biological resources development. The courses are designed to provide a systematic and efficient teaching and research by utilizing an integrated approach to the social and natural sciences and methodologies.

(1-1) Department of Development Technology

(1-1-1) Development Technology Course

We conduct research and education activities, from an international perspective, related to a variety of technologies that can facilitate sustainable development, based upon our knowledge

of the local environment of a particular country. More specifically, our focus upon developing countries primarily in Asia, includes the following areas: disaster prevention, building and urban environmental science, urban/regional and transportation planning, marine development and usage, development of environmental monitoring methodology, environmental system engineering, ecosystem conservation and management, and biological resource development and usage.

5 . Necessary Curriculum to Obtain to the Degrees

To obtain a Master's degree, JDS fellows need to satisfy the following requirements:

Minimum of 30 credits through course work;

Submission of a master's thesis.

All students need to decide research topic and supervisors (one chief supervisor and two sub-supervisors) at the beginning of the first semester. Under the chief supervisor's advice, students will choose subjects to enroll and start preparations for a master's thesis.

List of subjects offered in 2011 academic year is attached. Students will choose subjects mainly from the Development Technology Course, but also can select some subjects offered by other 4 courses (Development Policy Course, Peace and Coexistence Course, Educational Development Course, and Cultural and Regional Studies Course) as free electives. (URL: http://www.hiroshima-u.ac.jp/en/idec/syllabus_timetable/)

【Common Courses I】

Course Title	Credit
International Relations	2
Environmental Management Technology	2
International Cooperation	2
Educational Development	2
Asian Cultures	2

【Common Courses II】

Course Title	Credit
Developing Debating Skills Designing Ability Fieldwork	2
Internship	2
Graduate Writing I	2
Graduate Writing II	2

【Common subjects for the Division of Development Science】

Course Title	Credit
Development Sciences I	2
Development Sciences II	2

【Development Technology】

Course Title	Credit
Development Technology	4
Transportation Engineering	2
Regional and Urban Engineering	2
Tourism Policy	2
Transportation Planning	2
Systems Analysis for Regional Development	2
Environment Simulator	2
Marine Hydrodynamics	2

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Ground Disaster Prevention Engineering I	2
Ground Disaster Prevention Engineering II	2
Applied Marine Hydrodynamics	2
Marine Environmental Conservation	2
Environmental Fluid Dynamics	2
Earthquake Resistant Structures	2
Disaster Prevention of Earthquakes	2
Strength of Structures	2
Architectural Planning and Theory	2
Environmental Planning	2
Environmental Monitoring	2
Grassland Ecology	2
Animal Resources	2
Management and Conservation of Ecosystems	2
Botany: Resources for the Future	2
Ecosystem Microbiology	2
Applied Ecosystem Science	2
Environmental Sabo- Engineering	2
Biomass Utilization	2
Sustainable Architecture and Urban Development I	2
Sustainable Architecture and Urban Development II	2
Seminar on Regional and Urban Engineering	8
Seminar on Development Technology	8
Seminar on Environmental Conservation	8
Seminar on Environmental Monitoring	8
Seminar on Animal Reproduction	8
Seminar on Resource Ecology	8
Seminar on Social Environmental System Engineering	8

Acquiring Credits for Master's Program

1) Common subjects I・II(required electives)	6 credits (4 credits required from Common subjects I)
2) Subjects specified by the supervisor (required)	12 credits or more
3) Seminar (required)	4 credits or more
4) Free electives outside of the subjects specified by the supervisor and may be subject taken at another graduate school (elective)	
Total: 30 credits or more	

Notes:

- 1) Under the guidance of the supervisor the student must take three subjects to be done as required electives. Students who take more than 6 credits as common subjects I・II must consult with their supervisor and include these subjects in categories '2' (subjects specified by the supervisor) or '4' (free electives outside of the subjects specified by the supervisor and may be subjects taken at another graduate school).
As a rule students are to consult with their supervisor on the 12 credits or more they are to take from the list of established specified courses.
- 2) Students are required to take one seminar as specified by the supervisor. Students are allowed to take a maximum of 8 credits for seminars. Those taking more than 4 credits for seminars must consult with their supervisor and include those credits in categories '2' (subjects specified by the supervisor) or '4' (free electives outside of the subjects specified by the supervisor and may be subjects taken at another graduate school).

6 . Academic Schedule

(Reference)

Fall Semester (October 1 - March 31)

October 1	Entrance Ceremony, Orientation
October 1 - February 11	Classes
Early October	International Student Orientation (University-wide)
Mid October	Deadline of Class Registration
November 5	University Anniversary Day
December 24 - January 7	Winter Vacation
February 12 - March 31	End-of- Academic-Year Holidays

Spring Semester (April 1 - September 30)

April 1 - April 8	Spring Vacation
April 9 - July 31	Classes
Mid April	Deadline of Class Registration
July 10	Thesis Submission
August 1 (tentative)	Thesis Defense
August 1 - September 30	Summer Vacation
September 23(tentative)	Graduation Ceremony

7 . Facilities

Dormitories

“Ikenoue Dormitory” (approx. 180 rooms for international students) and “International House” (60 single, 10 family units), located on the Higashi-Hiroshima campus, are available for international students. The majority of students, however, live in privately-owned apartments.

Library

IDEC library has a collection of nearly 30,000 titles of books and journals. Our collection is mainly focused on economics of development, education development, international relations and Asia regional culture development.

The "World Bank Information Kiosk" is placed for the purpose of introducing active discussions in academic areas about the policy and actions of the World Bank. Students can access to the "World Development Indicators Online" in the IDEC library. Flag ship publications, project reports, brochures and publications from the World Bank Tokyo Office are also available.

JDS fellows have full access to 5 other libraries on campus which have approximately 3,300,000 materials in its collection. Holding a huge collection of books and electronic journals, with a total combined area of 29,000 square meters, Hiroshima University Library System comprising of 5 libraries is one of the largest in the country.

Other facilities

On the campus, we have welfare facilities such as various cafeteria, a travel agency office, stores, book shops, a drug store and a barber shop. Hiroshima University also has a post office, a university health service center, and a dental clinic on the campus. The International Center provides mental counseling service to international students in English.

8 . List of faculty members capable of guiding JDS fellows

Students need to decide their research topic and supervisors (one chief supervisor and two sub-supervisors) at the beginning of the first semester. Under the chief supervisor’s advice, students will choose subjects to enroll and start preparations for their master’s thesis.

【Development Technology】

Subject	Position	Name	Research Subject
Resource Animal Science II	Professor	TSUDZUKI, Masaoki	Evaluation of genetic resources in poultry Mapping of qualitative and quantitative trait loci in poultry

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Management and Conservation of Ecosystems, Resource Plant Science	Professor	NAKAGOSHI, Nobukazu	Conservation and management of bio-resources in ecosystems, restoration of devastated forests, landscape-ecological approach to regional planning. GIS and RS technologies.
Environmental Planning	Professor	NISHINA, Daisaku	Living environment planning in buildings and urban area: water environment, landscape and environmental psychology
Marine Hydrodynamics, Applied Marine Hydrodynamics	Professor	HIGO, Yasushi	Hydrodynamic forces acting on floating structure, theoretical and numerical studies on seaquakes
Transportation Engineering, Transportation Planning	Professor	FUJIWARA, Akimasa	Transportation planning methods, evaluation of transport policies, and sustainable development and transport
Resource Animal Science I	Professor	MAEDA, Teruo	Manipulation of germ cells and embryos for the production of transgenic animals (domestic animals)
Marine Environmental Conservation, Marine Development Technology Planning	Professor	YAMASHITA, Takao	Prediction model for water circulation and material transport in coast and river system, Asian Environment Simulator and its application to international development and cooperation studies
Architectural Planning and Theory	Professor	HIRANO, Yoshinobu	Conditions and environment for building construction projects in Japan and foreign countries
Ground Disaster Prevention Engineering I, II	Professor	YAMAMOTO, Haruyuki	Development of natural disaster information system, environmentally-friendly and economical methods for the construction of foundations, image analysis of soil behavior and constitutive relations of soils
Grassland Ecology	Associate Professor	KAWAMURA, Kensuke	Biomass management using the knowledge of grassland ecosystems environmental agriculture or animal production Natural resource measurement using remote sensing and GIS
Regional and Urban Engineering, Tourism Policy	Associate Professor	ZHANG, Junyi	Urban activity/travel behavior models and survey methods, regional/urban development and transportation, tourism policy, urban and transportation issues in developing countries
Sustainable Architecture I, II	Associate Professor	KUBOTA, Tetsu	Building and urban environmental science for achieving sustainable development in developing world
Environmental System Engineering	Associate Professor	HIGASHI, Osamu	Building Low-Carbon Cities, Development of Renewable Energy System in Regional Society, Water Resource Management

9 . Message for Applicants

As of April 2011, 1,091 IDEC students have earned their master's degrees, 564 of whom were foreign (39 countries) students; while 202 obtained their doctoral degrees, 128 of whom were foreign (29 countries) students. Hiroshima University has a long history of accepting foreign

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students from Southeast Asian underdeveloped countries. This commenced before World War II with some of the students employed as high government officials devoted to the development of their home countries. International cooperation is a long-term effort, but we firmly believe that our mission is to continually develop in order to create distinctiveness in history. We hope that you will join us and help us to contribute to the field of international cooperation.