TAOYAKA Program

for creating a flexible, enduring, peaceful society – Continuous Master's / Doctoral Degree Program –

2013 Program for Leading Graduate Schools, MEXT Composite Category (Pluralistic Society)

To Train Cultural-Technical-Social Onsite Reverse Innovation Leaders



HIROSHIMA UNIVERSITY



Taoyaka Program for creating a f



Mitsuo Ochi President of Hiroshima University

Message from Dr. Mitsuo Ochi, the President of Hiroshima University

Hiroshima University has the founding principle of "a single unified university, free and pursuing peace". It has grown into one of Japan's foremost research universities under the following five guiding principles: "the pursuit of peace", "the creation of new forms of knowledge", "the nurturing of well-founded human beings", "collaboration with the local, regional and international community", and "continuous self-development".

While modern society has achieved remarkable progress in science and technology, it faces a number of issues, including the frequent occurrence of natural disasters, poverty and regional conflicts. To tackle such challenges and contribute to peace and sustainable development throughout the world, in 2014 Hiroshima University launched the TAOYAKA PROGRAM for creating a flexible, enduring, peaceful society, a Master's and Doctoral degree program.

The aim of this program is to produce human resources who are able to create new frameworks of knowledge that go beyond conventional academic disciplines and fields of research, and send them out into society as global leaders in a wide range of areas in industry, government and academia. We aim to train leaders who can develop and implement new technologies and approaches to resolve issues in disadvantaged areas that do not have basic educational and medical services, thus contributing to multi-cultural coexistence.

"Taoyaka" is a beautiful word that expresses something supple yet strong. We look forward to welcoming students who aspire to standing up to adversity and leading the way to develop a "Taoyaka" future.

Message from Prof. Makoto Miyatani, Program Director

Launched in April 2014, Taoyaka Program utilizes a multidimensional approach integrating Hiroshima University's strong areas of studies-humanities, social sciences, and science and technology. The program provides students with knowledge and skills for in-depth understanding societies and diverse cultures unique to the region of their interest/research areas.

Our students are then able to identify issues and problems specifically to these regions, develop tools using advanced technologies, and find effective solutions. Students have an opportunity to implement their innovative plans and strategies in these regions. Ultimately, students will contribute to society and play active roles in the world as global leaders.

In our program, we give more importance to student-centric and two-way communication approach. Rather than one-way teaching, students' ideas and opinions are also valued; students will play an important role in research projects. As such, project-based learning with student-centric approach is one of the important aspects of our program.

Students actively explore real-world problems and challenges which provide them with deeper knowledge in their research area. Students are then able to analyze the problem, develop research questions, and suggest recommendations and solutions based on their knowledge acquired from their field work.

Specifically, our Onsite Team Project represents most of the characteristics of our multidisciplinary approach. Students team up with different fields-Humanities, social sciences, advanced technology studies, and social engineering/ developmental science—and work on challenging issues and finding solutions in disadvantaged areas. The project is expected to be unique with optimal outcomes utilizing the integrated sources, knowledge, and perspectives from students majoring in different subject-areas. The project also provides opportunity to challenge each other and develop professional attitude. Our highly experienced faculty members support the students' personal and professional growth.

This is a newly established program which provides limitless opportunities for growth and development. We look forward to welcoming students with high aspirations and strong motivation.

Message from Prof. Akimasa Fujiwara, Program Coordinator

Today, the world is changing rapidly. Globalization, development of information technology, and global environmental changes have strongly influenced our modern society. Although most communities adapt and successfully deal with these changes; some of them are finding it difficult to catch up and adjust with the changes, and some are even facing a crisis of survival. In order to actualize multicultural coexistence, all communities need to be respected and valued equally. However, communities in disadvantaged areas and countries need special attention and support for developing sustainable autonomy and adaptability in order to deal effectively with the changes.

The goal of TAOYAKA program is to create a 'flexible, enduring and peaceful society of coexistence' that is capable of addressing global challenges.

To create such a society of coexistence, the regional culture must be understood and placed at the center stage of the issues. Based on that, appropriate technologies need to be developed which further add value to the cultural identity of the region. This multidimensional approach which brings together culture, technology and social sciences would contribute towards overall growth

of the society. The main aspects of this educational program are onsite education and reverse innovation. The onsite education focusses on disadvantaged regions which

are facing multiple issues. These issues will provide students with learning opportunities. In particular, we focus on south Asia which is struggling with poverty and wealth disparity. In Japan, the Chugoku and Shikoku region are under our focus because of depopulation and the aging of society.

The second important aspect of the course i.e. reverse innovation encourages the value creation, product development, and system design using bottom up approach. It promotes innovation which is developed at regional level and driven by culture. It further contributes to the revitalization of disadvantaged areas.



Makoto Miyatani **Program Director**



Akimasa Fujiwara Program Coordinator

lexible, enduring, peaceful society



Program for Leading Graduate Schools

To equip excellent students with a broad perspective and originality, and train them to be leaders who are globally successful in a wide range of fields in industry, academia and government, we have gathered together the best teachers and students from within and outside of Japan. Our graduate education has been radically reformed, resulting in consistent, cross-disciplinary doctoral degree programs that enjoy participation from members of industry, academia and government, and guarantee a world-class level of quality. This Program supports such reform: its aim is to drive the formation of a graduate school fitting of the highest level of education.

Principles of TAOYAKA Program

TAOYAKA society is defined as one embodying the features of a flexible, enduring, and peaceful as well as having a global perspective. In today's global society, disadvantaged areas with various issues exist in both developed and developing nations; realization of the society of multicultural- coexistence is highly demanded. TAOYAKA society can be brought about through the cycle in which the culture of each region will be set as the point of origin where issues are identified, necessary technology is developed, and the results of such work is implemented in society, leading to further cultural creation. TAOYAKA program is designed to foster global leaders who can contribute to multicultural coexistence by deeply understanding regional societies and cultures, developing proper technologies, and implementing these to resolve problems that disadvantaged regions confront while working closely with the regions. TAOYAKA program offers a wide range of interdisciplinary course work on campus and intensive onsite experience in disadvantaged areas in both developed and developing countries through three courses: Cultural Creation course; Technical Creation courses; and Social Implementation course.





and the ability to contribute to multicultural coexistence through wide-ranging activities as leaders throughout the world promoting Onsite Reverse Innovation.

Realization of TAOYAKA Society - Hiroshima University's New Practice of Peace Education -

Hiroshima University has implemented Peace Education for many years, with "Pursuit of Peace" as one of the basic principles. Being based on the same principle of pursuing peace, realization of Taoyaka society must be addressed by Hiroshima University. TAOYAKA program aims for realization of Taoyaka society - a society that can flexibly address various different issues, an everlasting society that creates culture and carries on cultural traditions, and a society where people can live with peace of mind.

Onsite Reverse Innovation from Disadvantaged Regions

State-of-the-art science and technology developed in advanced nations and supporting today's society have the potential to dramatically transform not only advanced nations but also societies in developing nations as well. Onsite reverse innovation is comprised of reverse innovation that functions in the opposite direction of conventional technicalseeds-innovation, with ideas generated from regional cultural and social issues, designed to respond to social needs.

Implementation of Onsite Education in Disadvantaged Regions

We believe that onsite reverse innovation is most required in disadvantaged regions, including societies in a spiral of poverty and wealth disparity, conflicted societies fighting each other over limited resources, societies that accept the dying out and loss of tangible and intangible cultural assets that have been handed down by their ancestors, isolated societies that cannot satisfactorily access mutual and complementary aid services. In this program, the disadvantaged areas covered as educational fields are south Asia centering on India, and semi-mountainous regions in Japan. Such regions are facing a multitude of issues related to multicultural coexistence, of which many are common to both developed and developing nations. Students will utilize their knowledge of different disciplines to work under the constraints of disadvantaged regions to take up the challenge to resolve multicultural coexistence issues.

Skills Acquired

Multifaceted Thinking

The ability to use one's academic knowledge n the humanities and science and technology to gain an overview of the field demand based on the specific issues being faced in the region, and identify an executable resolution measure from various viewpoints and approaches, flexibly and promptly.

Execution Ability

The ability to develop and propose concrete plans to execute resolution measures in group organizations with different backgrounds, objectively analyze and evaluate alternative measures, negotiate with others, organize teams and achieve goals with a sense of ethics.

Creativity

Based on the constraints in the disadvantaged regions, the ability to mobilize one's cross-disciplinary knowledge to develop science and technology that meets the field demand as well as the policies and systems to support it, inviting the creation of a new regional culture.

Dev

Disadvantaged Regions in eveloping Nations

South Asian Regions Suffering Poverty and Wealth Disparity



Autonomy

Rather than simply providing a solution for the field demand in question, the ability to propose and create one's own new framework for a taoyaka society, one in which culture and technology mutually enhance one another in the regional society.



Disadvantaged nced Nations

Chugoku and Shikoku Region where depopulation and aging population is progressing



Curriculum

Proposal-Based Education

This program offers a cross-faculty educational course that enables agile response to field demand in diversifying regional societies, as well as proposal-based education through onsite learning.

Curriculum Overview

Aiming for the creation of a taoyaka society, this program undertakes the training of human resources who strongly empathize with Hiroshima University's principle of the pursuit of peace, and take up the challenge to resolve multicultural coexistence issues from the perspective of cultural creation, application of technology and social transformation, through education implemented on campus and onsite, venturing beyond existing academic fields.

A particular feature of the program is the fact that it is centered on onsite education through cross-disciplinary collaboration. The program is structured to enable participants to efficiently acquire the skills necessary to successfully act as innovation leaders aiming for the creation of a multicultural coexistence society, without relying greatly on traditional fields of specialty.

The program consists of three core subjects: 1) Basic Subjects for Peace and Coexistence; 2) Multicultural Coexistence Practical Subjects; and 3) Reverse Innovation Specialized Subjects. "Basic Subjects for Peace and Coexistence" reflects the important principle of Hiroshima University, consisting of various courses specifically to help students develop a mindset pursuing world peace.

The core subjects include specialized courses and a number of onsite education that are designed to support students to become future global leaders. Students will gain specialized skills and academic knowledge required for reverse innovation, collaborative skills for working effectively with professionals from different disciplines, and hands-on research and experience in disadvantaged areas nationally and internationally.

Students need to obtain the credits required for the graduate school to which they belong, in addition to fulfilling the requirements for the Taoyaka Program (the requirement for Master's programs is 30 credits, and for Doctoral programs 10-16 credits. In some cases the subjects may be the same as those required for the Taoyaka Program).

Onsite Education

Onsite Course Rotation (D1)

Students will go on a one-day field trip to a place in which residents have economic or technological needs in Japan. The courses aim at training students how to team up together and how to find out problems and solutions.

Onsite Training (D1 and D2)

Students will participate in an onsite training and go on a seven-day long filed trip to a disadvantaged region in Japan and overseas. During the field trip, students will learn basic thought processes and approaches to address the cultural features specific to regional societies and overcoming technical issues. Furthermore, the students will experience two or more multicultural coexistence issues and summarize their results as a case study, working as a team with students from different fields.

Internship (D1-D5)

Students will participate in a one-month long internships at affiliated companies, international agencies, NGOs and other organizations. Through their internships, students will find issues onsite, and learn about possible resolutions for such issues as well as methods to practically and comprehensively make use of the knowledge they have obtained at university.

Onsite Team Project (D3-D4) (Required Selective Subject)

Students from three different courses will form teams, to plan and implement an onsite team project based on their own unique ideas, in which they will receive support from industry, academia and government as well as the field network. In this project, the students from different courses will bring together their respective specialist knowledge to try to resolve multicultural coexistence issues.



ΤΑΟΥΑΚΑ

Kodani Area, Higashi Hiroshima City [Onsite Course Rotation]



India [Onsite Training]



Kita- Hiroshima Cho [Onsite Team Project]

Opening Ceremony



International Symposium

Symposiums are held inviting experts active on the front line of their fields, to learn about and consider a society of coexistence. The aim is to guide society in a positive direction, where there is close contact with regions facing issues, such as developing nations and under-populated areas in Japan.



International Symposium "Onsite-Education for Global Understanding Graduate School Programs and IYGU 2016"

Taoyaka Program seminar

Taoyaka Program Seminars provide opportunities for students to exchange information on multicultural-coexistence and to develop educational materials.





Multidisplinary Seminar

We offer opportunities for students to go forth from the campus and come into contact with state-of-the-art technology used on-site.



Geothermal Electric Power Plant, Beppu City, Oita



Soundness Survey of the Atomic Bomb Dome, Hiroshima City

Program Members

Academic Mentors

Cultural Creation Course		
Name	Affiliation	Major
TOMOZAWA Kazuo	Cultural Creation Course Leader, Professor, Graduate School of Humanities and Social Sciences, Division of Humanities and Social Sciences / Director of the Center for Contemporary India Studies	Human Geography
KAWANISHI Hidemichi	Special-Appointed Professor, Morito Institute of Global Higher Education	Japanese History
FUNCK, Carolin	Professor, Graduate School of Humanities and Social Sciences, Division of Humanities and Social Sciences	Tourism Geography
MAHARJAN, Keshav Lall	Professor, Graduate School of Humanities and Social Sciences, Division of Humanities and Social Sciences	Regional Research in South Asia
SEKI Koki	Professor, Graduate School of Humanities and Social Sciences, Division of Humanities and Social Sciences	Cultural Anthropology
NAKAMURA Taira	Professor, Graduate School of Humanities and Social Sciences, Division of Humanities and Social Sciences	Anthropology, Japanology
GOTO Takuya	Associate Professor, Graduate School of Humanities and Social Sciences, Division of Humanities and Social Sciences	Human Geography
USUI Rie	Assistant Professor, Graduate School of Humanities and Social Sciences, Division of Humanities and Social Sciences	Tourism Geography
KUMAHARA Yasuhiro	Associate Professor, Graduate School of Humanities and Social Sciences, Division of Educational Sciences	Physical Geography
NAKAYA Ayami	Associate Professor, Graduate School of Humanities and Social Sciences, Division of Educational Sciences	Comparative and International Education
NAKAZORA Moe	Lecturer, Graduate School of Humanities and Social Sciences, Division of Educational Sciences	Cultural Anthropology
OKAHASHI Hidenori	Professor, Faculty of Letters, Nara University	Human Geography
TOGAWA Masahiko	Professor, Research Institute for Languages and Cultures of Asia and Africa, Tokyo University of Foreign Studies	Cultural Anthropology
CHIN Rin	Special-Appointed Assistant Professor, Center for Contemporary India Studies	Geography
ISHIKAWA Nao	Associate Professor, Faculty of Sociology, Toyo University	Geography
OTA Atsushi	Associate Professor, Faculty of Economics, Keio University	History

Technical Creation Course		
Name	Affiliation	Major
ISHII Idaku	Technical Creation Course Leader, Professor, Graduate School of Advanced Science and Engineering, Division of Advanced Science and Engineering	High-speed and Real-time Vision, Sensory Information Processing, Hyper-human Robotics
TSUJI Toshio	Professor, Graduate School of Advanced Science and Engineering, Division of Advanced Science and Engineering	Bioengineering
NISHIZAKI Ichiro	Professor, Graduate School of Advanced Science and Engineering, Division of Advanced Science and Engineering	System Engineering
YORINO Naoto	Professor, Graduate School of Advanced Science and Engineering, Division of Advanced Science and Engineering	Electric Power System Engineering
TAKAHASHI Katsuhiko	Professor, Graduate School of Advanced Science and Engineering, Division of Advanced Science and Engineering	Industrial Engineering
YAMAMOTO Toru	Professor, Graduate School of Advanced Science and Engineering, Division of Advanced Science and Engineering	Control Engineering
KURITA Yuichi	Professor, Graduate School of Advanced Science and Engineering, Division of Advanced Science and Engineering	Haptics, Human Interaction
HIGASHI Seiichiro	Professor, Graduate School of Advanced Science and Engineering, Division of Advanced Science and Engineering	Semiconductor Electronics
KADOYA Yutaka	Professor, Graduate School of Advanced Science and Engineering, Division of Advanced Science and Engineering	Optical Electronics
TAKAKI Takeshi	Professor, Graduate School of Advanced Science and Engineering, Division of Advanced Science and Engineering	Robotics Engineering
ZOKA Yoshifumi	Associate Professor, Graduate School of Advanced Science and Engineering, Division of Advanced Science and Engineering	Electric Power System Engineering
KATO Junichi	Professor, Graduate School of Integrated Sciences for Life, Division of Integrated Sciences for Life	Applied Microbiology, Bioengineering

Social Implementation Course		
Name	Affiliation	Major
FUJIWARA Akimasa	Program coordinator, Professor, Graduate School of Advanced Science and Engineering, Division of Advanced Science and Engineering	Transportation Engineering
KANEKO Shinji	Technical Creation Course Leader, Professor, Graduate School of Humanities and Social Sciences, Division of Humanities and Social Sciences	Environment and Resource Economics
ZHANG Junyi	Professor, Graduate School of Advanced Science and Engineering, Division of Advanced Science and Engineering	Urban and Transportation Planning
KAWAI Kenji	Professor, Graduate School of Advanced Science and Engineering, Division of Advanced Science and Engineering	Concrete Technology
MATSUMURA Yukihiko	Professor, Graduate School of Advanced Science and Engineering, Division of Advanced Science and Engineering	Energy Engineering
OHASHI Akiyoshi	Professor, Graduate School of Advanced Science and Engineering, Division of Advanced Science and Engineering	Water Environmental Engineering
KUBOTA Tetsu	Associate Professor, Graduate School of Advanced Science and Engineering, Division of Advanced Science and Engineering	Architectural Urban Environmental Engineering
TRAN Dang Xuan	Associate Professor, Graduate School of Advanced Science and Engineering, Division of Advanced Science and Engineering	Agrobiology, Plant Science
TSUKAI Makoto	Associate Professor, Graduate School of Advanced Science and Engineering, Division of Advanced Science and Engineering	Regional Plan, Statistical Analysis
LEE Han Soo	Associate Professor, Graduate School of Advanced Science and Engineering, Division of Advanced Science and Engineering	Coastal and Ocean Engineering
CHIKARAISHI Makoto	Associate Professor, Graduate School of Advanced Science and Engineering, Division of Advanced Science and Engineering	Civil Engineering

Social Implementation Course Affiliation Name Major ICHIHASHI Masaru Professor, Graduate School of Humanities and Social Sciences, Division of Humanities and Social Sciences Economics Director of Center for Peace / Professor, Graduate School of Humanitie and Social Sciences, Division of Humanities and Social Sciences KAWANO Noriyuki Peace Studies Professor, Graduate School of Humanities and Social Sciences, Division of Humanities and Social Sciences Development Macroeconomics YOSHIDA Yuichiro Professor, Graduate School of Humanities and Social Sciences, Division of Humanities and Social Sciences Associate Professor, Graduate School of Advanced Science and Engineering, Division of Advanced Science and Engineering KAKINAKA Makoto International Economics Applied Micro-Economics GOTO Daisaku Associate Professor, Center for the Study of International Cooperation in Education/Associate Professor, Graduate School of Humanities and Social Sciences, Division of Educational Sciences Comparative and International SAKURAI Riho Associate Professor, Institute of Social Science, the University Economics of Tokyo KAWATA Keisuke

TAOYAKA

Name	Affiliation	Major
MIYATANI Makoto	Executive ad Vice President (Education)	Cognitive Psychology
AIDA Misako	Executive Advisor to the President	Quantum Chemistry, Biophysics
WATANABE Sonoko	Associate Professor, Graduate School of Advanced Science and Engineering, Division of Advanced Science and Engineering	Ecology
NIRAJ Prakash Joshi	Associate Professor, Graduate School of Humanities and Social Sciences, Division of Humanities and Social Sciences	Regional Research in a Disadvantaged Region

Professional Mentors

Name	Affiliation
VICTORINO Aquitania	Regional Director, ICLEI, Local Governments for Sustainability Southeast Asia Secretariat
NURJAHAN Begum	Former Managing Director, Grameen Shakti
Ram Prasad DHITAL	Executive Director, Alternative Energy Promotion Centre (AEPC) Ministry of Environment, Science and Technology Government of Nepal
David EATON	Professor, LB J School of Public Affairs, The University of Texas at Austin
Prakash Chandra TIWARI	Professor, Kumaon University, India
Hassan VIRJI	Former Professor, University of Maryland
OKAMOTO Takuji	President, Keisoku Research Consultant Co.
KAWAMOTO Kazuyuki	Special Adviser, The Chugoku Shimbun Co., Ltd.
SHIRAKAWA Katsunobu	Chief Curator, Hiroshima Prefecture Kitahiroshia-cho Board of Education
NISHIMIYA Noriaki	Senior Technical Advisor, Oriental Consultants Global Co., Ltd.
IZURU Hanaki	Chugoku Bureau of Economy, Trade and Industry
FUJIYAMA Ko	Director, Research Institute for Sustainable Community Company/ Professor, The University of Shimane, cooperation system of graduate school
MISUMI Sachiko	Director General, JICA Chugoku International Center
MORIYAMA Masayuki	President, Vital LEAD Co. LTD.
YAMADA Mamoru	Global Mobility Manager of Human Resources Japan, Micron Technology
S. Paul SUMITRO	President and CEO, Smart Sensys LLC, IL

Degree & Completion Requirements

Degree



Doctor of Literature, Doctor of International Cooperation, Doctor of Philosophy, Doctor of Education



The following degrees are conferred in this program depending on the course in which the student is enrolled. The diploma

conferred will state 'This is to confer the degree of doctorate (Type of degree) in recognition of completion of the doctorate





Doctor of Philosophy, Doctor of Engineering, Doctor of International Cooperation

Completion Requirements

Students may apply for conferment of degree after acquiring the credits stipulated for this program and each graduate school, passing the Qualifying Examination (QE), and subsequently submitting a thesis written in English. In cases where the Organization of the Leading Graduate Education Program has judged that the student has fulfilled the requirements for completion of the program, it shall set up an examination committee made up of teaching staff from this program with a close affiliation with the content of the doctoral thesis submitted, and external examination committee members. The final exam shall include an examination of the thesis and oral defense in English.

Qualifying Examination 1(Examination of Abilities to Proceed to Doctoral Program)

program (Taoyaka Program) in the Graduate School of (XXX) at Hiroshima University'.

Upon advancing to D3, an intermediate examination shall be conducted to ascertain, through a qualifying examination (QE1) including the onsite research proposal, whether or not the student is adequately qualified as a reverse innovator candidate.

Qualifying Examination 2 (Doctoral Candidate Examination)

Students who wish to undertake the doctoral thesis examination need to submit outline for doctoral thesis written in English, having fulfilled the requirements for completion of the degree program, and undertake a preliminary examination in English.

Qualifying Examination 3 (Examination of Doctoral Thesis)

The thesis will be presented at a public hearing held by a doctoral thesis examination committee set up by the Organization of the Leading Graduate Education Program. Students need to respond to questions, including the oral defense, in English.

Educational Expenses

Admission Fee: 282,000 (JPY)

Tuition Fee: 535,800 (JPY) (per year)

Notes: The above details regarding support are provisional as of March, 2020 and are subject to change.

Support for Students

Students enrolled in TAOYAKA Program will receive the following support within the amount set by this program.

1. Scholarship	Hiroshima University Leading Program Excellent Scholarship: Awarding a scholarship to excellent students. (3 students) (JPY 50,000 per month) (Selection will be made every semester based on students' academic grades and remarkable achievements.)
2. Tuition Fee Waiver	Hiroshima University Leading Program Tuition Fee Waiver: Full or half tuition fee exemption for a semester for excellent students who are in financially difficult situation. (Selection will be made every semester based on students' academic grades and financial situation.)
3. International Conference Support	When the program student makes a presentation at an international conference, either an oral or poster presentation, the program will cover partial or full expenses including participation fee and transportation expenses after the selection by the program.
4. Internship Support	When the program student conducts internship, the program will cover partial or full transportation expenses after the screening of the documents by the program.

Notes: The above details regarding support are provisional as of March, 2020 and are subject to change.

For up-to-date application information, visit our website: https://taoyaka.hiroshima-u.ac.jp/english/

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