



Knowledge Co-Creation Program (Group & Region Focus)

GENERAL INFORMATION ON

SEISMOLOGY, EARTHQUAKE ENGINEERING,
AND
TSUNAMI DISASTER MITIGATION
課題別研修「地震学・耐震工学・津波防災」
JFY 2021

NO. 202003271J001

Course Period in Japan: September 29th, 2021 to September 16th, 2022
(In the context of the COVID-19 pandemic, please note that methodology of course may be modified.)

This information pertains to one of the JICA Knowledge Co-Creation Program (Group & Region Focus) of the Japan International Cooperation Agency (JICA), which shall be implemented as part of the Official Development Assistance of the Government of Japan based on bilateral agreement between both Governments.

'JICA Knowledge Co-Creation Program (KCCP)' as a New Start

In the Development Cooperation Charter which was released from the Japanese Cabinet in February 2015, it is clearly pointed out that *"In its development cooperation, Japan has maintained the spirit of jointly creating things that suit partner countries while respecting ownership, intentions and intrinsic characteristics of the country concerned based on a field-oriented approach through dialogue and collaboration. It has also maintained the approach of building reciprocal relationships with developing countries in which both sides learn from each other and grow and develop together."* We believe that this 'Knowledge Co-Creation Program' will serve as a center of mutual learning process.

I. Concept

Background

Earthquake and Tsunami disasters frequently take human lives, destroy houses and devastate social properties instantly and enormously. In general, natural disasters have difficulty of preparedness and precaution due to unpredictability as well as difficulty of immediate response to damage for sudden occurrence, and often cause heavy economic losses. Moreover, earthquakes and tsunamis may accelerate human losses by fires, collapse of man-made structures and/or inundation of coastal areas.

Although the studies related to earthquakes and tsunamis are developed, people are seriously suffered from earthquakes and tsunamis in many countries. The 2011 off the Pacific coast Tohoku Earthquake still lives in the people.

In order to improve technologies in seismology, earthquake engineering, and tsunami disaster mitigation in developing countries located in earthquake/tsunami-prone areas, it is important to develop those technologies applicable to each country by its own efforts, taking conditions and systems of the respective countries into consideration as well as to transfer their latest knowledge and technology from developed countries.

To achieve this aim, it is indispensable to train experts as human resources to be highly capable of planning, instructing, and extending earthquake and tsunami disaster mitigation technologies, by combining relevant advanced technologies with administrative capability to utilize and disseminate those technologies.

For what?

This program aims to increase capacities of officials, engineers or researchers who are conducive to earthquake and tsunami disaster management. In this course, participants will acquire Japan's leading knowledge and technologies on seismology, earthquake engineering and tsunami disaster mitigation.

<Examples of Japan's leading knowledge and technologies>

(See ANNEX I and IV for details)

Seismology: Earthquake source, Microtremor exploration and Strong ground motion simulation;

Earthquake Engineering: Non-linear seismic response evaluation, Performance-based seismic design, Seismic diagnosis and retrofit, Energy dissipation system and Seismically isolated system;

Tsunami Disaster Mitigation: Tsunami early warning system, Tsunami simulation and Tsunami hazard and risk assessment.

For whom?

This program is provided to those who are technical officials, engineers or researchers of governmental organizations, research institutes or universities having

public interest in seismology, earthquake engineering or tsunami disaster mitigation, and who have university degrees in seismology, earthquake engineering, tsunami or equivalent and 3 years working experience.

How?

Participants shall have opportunities in Japan to acquire knowledge and technologies of earthquake or tsunami disaster mitigation through lectures, discussions, exercises, on-site-visit, etc.

Participants will also formulate a research report and a course report describing what the participant learned and what the participant will do after they go back to their home countries by putting the knowledge and ideas acquired and discussed in Japan into their on-going activities.

Remarks:

The curriculum of this course is approved as a master's degree program by the National Graduate Institute for Policy Studies (GRIPS) and Building Research Institute (BRI). In order to enroll in the master's degree program, applicants must fulfill all the requirements listed in ANNEX II. After enrolling the master's program and completing all graduation requirements during the program, the participants will be awarded a Master's degree, "Master of Disaster Management" by GRIPS and BRI. Accordingly this program is very demanding. Applicants, with an excellent demonstrable educational and professional background and proficiency in English, should be highly motivated and confident enough to pursue and attain the requirements of the program so that they can obtain the degree.

II. Description

1. Title (J-No.):

Seismology, Earthquake Engineering, and Tsunami Disaster Mitigation
(202003271J001)

2. Course Period in JAPAN:

September 29th, 2021 to September 16th, 2022

3. Target Regions or Countries:

Indonesia, Malaysia, Philippines, Timor-Leste, Bangladesh, Bhutan, Fiji, Tonga,
El Salvador, Colombia, Peru, Algeria, Ghana

4. Eligible / Target Organization:

This program is designed for governmental organizations, research institutes or universities having public interest in seismology, earthquake engineering or tsunami disaster mitigation.

5. Course Capacity (Upper Limit of Participants):

21 participants

6. Language to Be Used in This Program:

English

7. Course Objective:

This course aims to increase capacities of technical officials, engineers and researchers in the fields of seismology, earthquake engineering and tsunami disaster mitigation who are conducive to earthquake and tsunami disaster management and disaster recovery policy.

8. Overall Goal:

The capacity of the earthquake / tsunami disaster mitigation in target countries is strengthened and the damage of earthquake / tsunami disaster is reduced.

9. Expected Module Output and Contents:

This program consists of the following components. Details on each component are given below;

(1) Preliminary Phase in a participant's home country

Preparation for the program

Basic mathematics for Seismology and Tsunami groups (homework)

(2) Phase in Japan (See ANNEX I for the detail)

September 29th, 2021 to September 16th, 2022

Participants are expected to achieve the following outputs;

- (1) To acquire basic concepts and theories on Seismology, Earthquake Engineering, or Tsunami which are essential to establish the Earthquake Disaster Mitigation Scheme.
- (2) To acquire basic concepts and theories on Seismic / Tsunami Hazard Estimation, Disaster Management and Disaster Recovery Policy in the fields of Seismology, Earthquake Engineering or Tsunami Disaster Mitigation.
- (3) To complete a research report for solving problems in participant's country applying techniques and knowledge acquired in the course.

****It is mandatory for the applicants to select one of the topics of Individual Study listed on the ANNEX I and write it in the face page of Inception Report. For those who select 'others' it is mandatory to describe a concrete plan of Individual Study including the expected supervisor's name and affiliation.***

III. Conditions and Procedures for Application

1. Expectations from the Participating Organizations:

- (1) This program is designed primarily for organizations that intend to address specific issues or problems identified in their operations. Applying organizations are expected to use the program for those specific purposes.
- (2) In this connection, applying organizations are expected to nominate the most qualified candidates to address the said issues or problems, carefully referring to the qualifications described in section III-2 below.
- (3) Applying organizations are also expected to be prepared to make use of knowledge acquired by the nominees for the said purpose.

2. Nominee Qualifications:

Applying organizations are expected to select nominees who meet the following qualifications.

- 1) be nominated by their governments in accordance with the procedures described in III-4.
- 2) be technical officials, engineers or researchers who have university degrees in seismology, earthquake engineering, tsunami or equivalent.
- 3) be an employee of governmental organizations, research institutes or universities having public interest in seismology, earthquake engineering or tsunami disaster mitigation. (More than 3 years of working experience are recommended). If a nominee has to resign from his/her job in order to participate in the program, he/she is expected to return to work at the belonging organization after the program.
- 4) be well versed in advanced mathematics such as differentiation and integration, partial derivatives, differential equations, matrix, vector algebra, Fourier analysis, etc.
- 5) be proficient in MS Word, Excel and PowerPoint.
- 6) be able to write research reports on the individual study in English.
- 7) have a competent command of spoken and written English ---with a minimum test score of TOEFL iBT 79, IELTS Academic 6.0 or its equivalent. (This program includes active participation in discussions and development of the action plan and research report, thus requires high competence of English ability both in conversation and composition.)

It is mandatory for applicants to GRIPS/BRI Master's Program to submit the above mentioned English certificate. (See ANNEX II).

- 8) be between the ages of twenty-five (25) and forty two (42) years as of October 1, 2021.
- 9) be judged medically adequate to pursue study in Japan by an examining physician on a prescribed certificate of health. Pregnant applicants are not

recommended to apply due to the potential risk of health and life issues of mother and fetus.

3. Required Documents for Application :

(1) Application Form: The Application form is available at **the JICA office (or the Embassy of Japan)**.

Applicants should mention their choice (Seismology group, Earthquake Engineering group or Tsunami Disaster Mitigation group).

(2) Inception Report:

Each applicant is required to originally write and prepare a typewritten Inception Report by him/herself in accordance with the Instruction for the Preparation of Inception Report (see ANNEX III).

The Inception Reports are used for screening applicants and for presentation. Each participant is required to make a 20-25 minutes presentation on Inception Report within about two weeks after the course begins. It is mandatory to bring these materials in digital forms.

(3) Photocopy of Passport:

To be submitted with the application form, if you possess your passport which you will carry when entering Japan for this program. If not, you are requested to submit its photocopy as soon as you obtain it.

*Photocopy should include the followings:

Name, date of birth, nationality, sex, passport number and expire date

(4) Application Materials for GRIPS/BRI Master's Program:

A part of curriculum of this course is approved as a master's degree program by GRIPS and BRI. It is required to prepare and submit all of the materials written in ANNEX II for admission to GRIPS/BRI Master's Program.

4. Procedures for Application and Selection :

(1) Submission of the Application Documents:

Closing date for applications: **Please inquire at the JICA office (or the Embassy of Japan)**.

After receiving applications, the JICA office (or the Embassy of Japan) will send them to **the JICA Center in Japan by April 9, 2021**

(2) Selection:

- 1) After receiving the document(s) through due administrative procedures in the respective government, the respective country's JICA office (or the Embassy of Japan) shall conduct screenings, and send the documents to JICA

Tsukuba, which organizes this program.

- 2) JICA Tsukuba will carry out the screening jointly with BRI and select the qualified applicants out of those who fulfill the set qualifications described above in III-2.
- 3) Some of the applicants may be requested to take an oral interview by telephone or TV conference system in the respective country's JICA office.
 - The cost of transportation to the respective country's JICA office for receiving an interview will be paid by applicants.
- 4) Procedure of screening for admission to GRIPS/BRI Master's Program is explained in ANNEX II.

In case the number of applicants is more than the capacity of this course, some applicants may not be accepted due to the limited number of seats even though they fulfill the requirements.

Qualifications of applicants who belong to the military or other military-related organizations and/or who are enlisted in the military will be examined by the Government of Japan on a case-by-case basis, consistent with the Development Cooperation Charter of Japan, taking into consideration their duties, positions in the organization, and other relevant information in a comprehensive manner.

(3) Notice of Acceptance:

Notification of results shall be made by the respective country's JICA office (or the Embassy of Japan) to the respective Government by **no later than July 30, 2021.** (*Acceptance Agreement will be sent from GRIPS together with the official admission letter soon after this notice of acceptance.)

5. Document(s) to Be Submitted by Accepted Candidates:

Basic Mathematics for Seismology

(Only for applicants who select Seismology Course and Tsunami Disaster Mitigation Course)

An accepted applicant will be given Basic Mathematics for Seismology material by BRI. The result of Basic Mathematics for Seismology material (homework) should be sent to BRI by **September 22, 2021.**

6. Conditions for Attendance:

- (1) to strictly adhere to the program schedule.
- (2) not to change the program topics.
- (3) not to extend the period of stay in Japan.
- (4) not to be accompanied by family members during the program.
- (5) to return to home countries at the end of the program in accordance with the travel schedule designated by JICA.

- (6)to refrain from engaging in any political activities, or any form of employment for profit or gain.
- (7)to observe Japanese laws and ordinances. If there is any violation of said laws and ordinances, participants may be required to return part or all of the training expenditure depending on the severity of said violation.
- (8)to observe the rules and regulations of the accommodation and not to change the accommodation designated by JICA.

7. Certificate:

- (1)A participant who has successfully completed the course will be awarded a certificate by JICA.
- (2)A participant, who has successfully fulfilled requirements given by International Institute of Seismology and Earthquake Engineering (IISEE), will be awarded another certificate and a diploma by IISEE.
- (3)A participant, who has enrolled in master's program and successfully completed all graduation requirements, will be awarded a Master's Degree, 'Master of Disaster Management,' by GRIPS and BRI.

IV. Administrative Arrangements

1. Organizer:

(1) Name: JICA Tsukuba

(2) Contact: Ms. McGOEY Sachie (tbictp@jica.go.jp)

2. Implementing Partner:

(1) International Institute of Seismology and Earthquake Engineering (IISEE) at Building Research Institute (BRI)

1) URL: <http://iisee.kenken.go.jp>

2) Address: 1 Tachihara, Tsukuba, Ibaraki 305-0802, Japan

3) TEL: +81-29-879-0679

4) FAX: +81-29-864-6777

5) E-mail: iisee@kenken.go.jp

6) Remark: IISEE is a research department of BRI that trains participants from earthquake-prone developing countries on seismology, earthquake engineering and tsunami disaster mitigation. The course is implemented at relevant places including BRI and GRIPS.

(where "81" is the country code for Japan, and "29" is the local area code)

(2) National Graduate Institute for Policy Studies (GRIPS)

1) URL: <http://www.grips.ac.jp/en/>

2) Address: 7-22-1 Roppongi, Minato-ku, Tokyo, 106-8677 Japan

3) TEL: +81-3-6439-6046

4) FAX: +81-3-6439-6050

5) E-mail: admissions@grips.ac.jp

6) Remark: GRIPS is a graduate school and research institute established in October 1997. GRIPS aims to be an international center of excellence for the education of future leaders in policy arena, advancement of policy research, and collection and dissemination of policy-related information.

(where "81" is the country code for Japan, and "3" is the local area code)

3. Travel to Japan:

(1) Air Ticket: The cost of a round-trip ticket between an international airport designated by JICA and Japan will be borne by JICA.

(2) Travel Insurance: Coverage is from time of arrival up to departure in Japan. Thus traveling time outside Japan will not be covered.

4. Accommodation in Japan:

JICA will arrange the following accommodations for the participants in Japan basically:

JICA Tsukuba Center (JICA Tsukuba)

Address: 3-6 Koyadai, Tsukuba, Ibaraki 305-0074, Japan

TEL: +81-29-838-1111, FAX: +81-29-838-1776

(where “81” is the country code for Japan, and “29” is the local area code)

Please refer to facility information of JICA Tsukuba at its URL:

<http://www.jica.go.jp/english/contact/domestic/information.pdf>

5. Expenses:

The following expenses will be provided to the participants by JICA:

(1) Allowances for accommodation, meals, living expenses, outfit, and shipping

(2) Expenses for study tours (basically in the form of train tickets)

(3) Free medical care for participants who become ill after arriving in Japan (costs related to pre-existing illness, pregnancy, or dental treatment are not included)

(4) Expenses for program implementation, including materials

For more details, please see “III. ALLOWANCES” of the brochure for participants titled “KENSU-IN GUIDE BOOK,” which will be given before departure for Japan.

The curriculum of this course is approved as a master’s degree program by GRIPS and BRI. The application fee, admission fee and tuition for the Master’s Degree Program will be provided by BRI.

6. Pre-departure Orientation:

A pre-departure orientation will be held at the respective country’s JICA office (or the Embassy of Japan), to provide participants with details on travel to Japan, conditions of the workshop, and other matters.

V. Other Information

1. Computer:

The participants are recommended to bring their own laptop/notebook computers to prepare a report, presentation slides and to communicate by e-mail.

2. Relevant Data for Seismology, Earthquake Engineering, and/or Tsunami Disasters in Participants' Country:

The participants are strongly recommended to bring the relevant data in their countries on their laptop/notebook computers for preparing presentation slides and reports requested in this course including a research report.

3. Introduction of Participants' Country:

The participants may have opportunities to join cultural exchange events or visit Japanese school. It is recommended to bring something to introduce their countries such as photographs, drawings, traditional goods, clothes, instruments or ornaments.

4. For the Promotion of Mutual Friendship:

JICA Tsukuba encourages international exchange between JICA participants and local communities, including school and university students as a part of development education program. JICA participants are expected to contribute by attending such activities and will possibly be asked to make presentations on the society, economy and culture of their home countries.

5. Bring Some Cash:

Allowances, such as for accommodation, living, clothing, and shipping, will be deposited to your temporary bank account in Japan after 2 to 5 days after your arrival to Japan. It is highly advised to bring some cash in order to spend necessary money for the first 2 to 5 days after your arrival.

6. Exchange to Japanese Currency (YEN):

It is very important that your currency must be exchanged to Japanese Yen at any transit airport or Narita International Airport or Haneda Airport, Japan soon after your arrival. It is quite difficult to exchange money after that, due to no facility or time during the program.

END

ANNEX I: Curricula of Phase in Japan

ANNEX II: Application Materials for GRIPS/BRI Master's Program

ANNEX III: Instruction for the Preparation of Inception Report

ANNEX IV: Syllabus of the Training Program (Tentative)

For Your Reference

JICA and Capacity Development

The key concept underpinning JICA operations since its establishment in 1974 has been the conviction that “capacity development” is central to the socioeconomic development of any country, regardless of the specific operational scheme one may be undertaking, i.e. expert assignments, development projects, development study projects, training programs, JOCV programs, etc.

Within this wide range of programs, Training Programs have long occupied an important place in JICA operations. Conducted in Japan, they provide partner countries with opportunities to acquire practical knowledge accumulated in Japanese society. Participants dispatched by partner countries might find useful knowledge and re-create their own knowledge for enhancement of their own capacity or that of the organization and society to which they belong.

About 460 pre-organized programs cover a wide range of professional fields, ranging from education, health, infrastructure, energy, trade and finance, to agriculture, rural development, gender mainstreaming, and environmental protection. A variety of programs and are being customized to address the specific needs of different target organizations, such as policy-making organizations, service provision organizations, as well as research and academic institutions. Some programs are organized to target a certain group of countries with similar developmental challenges.

Japanese Development Experience

Japan was the first non-Western country to successfully modernize its society and industrialize its economy. At the core of this process, which started more than 140 years ago, was the “*adopt and adapt*” concept by which a wide range of appropriate skills and knowledge have been imported from developed countries; these skills and knowledge have been adapted and/or improved using local skills, knowledge and initiatives. They finally became internalized in Japanese society to suit its local needs and conditions.

From engineering technology to production management methods, most of the know-how that has enabled Japan to become what it is today has emanated from this “*adoption and adaptation*” process, which, of course, has been accompanied by countless failures and errors behind the success stories. We presume that such experiences, both successful and unsuccessful, will be useful to our partners who are trying to address the challenges currently faced by developing countries.

However, it is rather challenging to share with our partners this whole body of Japan’s developmental experience. This difficulty has to do, in part, with the challenge of explaining a body of “tacit knowledge,” a type of knowledge that cannot fully be expressed in words or numbers. Adding to this difficulty are the social and cultural systems of Japan that vastly differ from those of other Western industrialized countries, and hence still remain unfamiliar to many partner countries. Simply stated, coming to Japan might be one way of overcoming such a cultural gap.

JICA, therefore, would like to invite as many leaders of partner countries as possible to come and visit us, to mingle with the Japanese people, and witness the advantages as well as the disadvantages of Japanese systems, so that integration of their findings might help them reach their developmental objectives.



CORRESPONDENCE

For enquiries and further information, please contact the JICA office or the Embassy of Japan. Further, address correspondence to:

JICA Tsukuba Center (JICA Tsukuba)
Address: 3-6 Koyadai, Tsukuba, Ibaraki 305-0074, Japan
TEL: +81-29-838-1111 FAX: +81-29-838-1776