



# 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 2023**

**NO. 202208490J001**

**Course Period in Japan: September 28th, 2023 to September 14th, 2024**

**(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 Programs (Group & Region Focus) of the Japan International Cooperation Agency (JICA) 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)

The Japanese Cabinet released the Development Cooperation Charter in February 2015, which stated, "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." JICA believes that this 'Knowledge Co-Creation Program' will serve as a foundation 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 (Course No.):**

Seismology, Earthquake Engineering, and Tsunami Disaster Mitigation  
(202208490J001)

**2. Course Duration in JAPAN:**

September 28th, 2023 to September 14th, 2024

**3. Target Regions or Countries:**

Algeria, Bhutan, Chile, El Salvador, Indonesia, Malaysia, Nicaragua, Peru, Philippines, Timor-Leste, Turkey, and Turkmenistan

**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. Capacity (Upper Limit of Participants):**

16 participants

**6. Language:**

English

**7. Objective(s):**

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. 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 group and Tsunami Disaster Mitigation group  
(homework)

- (2) Phase in Japan (See ANNEX I for the detail)  
September 28th, 2023 to September 14th, 2024

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. Eligibility and Procedures***

#### **1. Expectations to the Applying 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. Admission priority will be given to applicants who have a TOEFL iBT score of 79 or higher, or an IELTS Academic score of 6.0 or higher. (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, 2023. Those who are not fit into the age qualifications may be considered as eligible applicants, depending on the circumstance in the

applicants' countries.

- 9) Health : must be in good health to participate in the program in Japan.

To reduce the risk of worsening symptoms associated with respiratory tract infection, please be honest to declare in the Medical History (QUESTIONNAIRE ON MEDICAL STATUS RESTRICTION of the application form) if you have been a patient of the following illnesses; Hypertension / Diabetes / Cardiovascular illness / Heart failure / Chronic respiratory illness.

### **3. Required Documents for Application:**

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

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

\* If you have any difficulties/disabilities which require assistance, please specify necessary assistances in the QUESTIONNAIRE ON MEDICAL STATUS RESTRICTION (1-(c)) of the application form. Information will be reviewed and used for reasonable accommodation.

- (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 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:**

You should submit it 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.

\*The following information should be included in the photocopy:

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 confirm the local deadline with the JICA overseas office (or the Embassy of Japan).**

(All required materials must arrive **at JICA Center in Japan by April 7, 2023**)

##### **(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, via online meeting system, or TV conference system.
  - The cost of transportation to the respective country's JICA office for receiving an interview will be paid by applicants in case an interview is held at the JICA office.
- 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 28, 2023.** (\*Acceptance Agreement will be sent from GRIPS together with the official admission letter soon after this notice of acceptance.)



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

### **Basic Mathematics for Seismology**

(Only for applicants who select Seismology group or Tsunami Disaster Mitigation group)

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 28, 2023**.

## **6. Conditions for Participation:**

The participants of KCCP are required

- (1) to strictly observe the course schedule,
- (2) not to change the air ticket (and flight class and flight schedule arranged by JICA) and lodging by the participants themselves,
- (3) to understand that leaving Japan during the course period (to return to home country, etc.) is not allowed (except for programs longer than one year),
- (4) not to bring or invite any family members (except for programs longer than one year),
- (5) to carry out such instructions and abide by such conditions as may be stipulated by both the nominating Government and the Japanese Government in respect of the course,
- (6) to observe the rules and regulations of the program implementing partners to provide the program or establishments,
- (7) not to engage in political activities, or any form of employment for profit,
- (8) to discontinue the program, should the participants violate the Japanese laws or JICA's regulations, or the participants commit illegal or immoral conduct, or get critical illness or serious injury and be considered unable to continue the course. The participants shall be responsible for paying any cost for treatment of the said health conditions except for the medical care stipulated in (3) of "5. Expenses", "IV. Administrative Arrangements",
- (9) to return the total amount or a part of the expenditure for the KCCP depending on the severity of such violation, should the participants violate the laws and ordinances,
- (10) not to drive a car or motorbike, regardless of an international driving license possessed,
- (11) to observe the rules and regulations at the place of the participants' accommodation, and
- (12) to refund allowances or other benefits paid by JICA in the case of a change in schedule.

## **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 (IISSE), will be awarded another certificate and a diploma by IISSE.
- (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(JICA Center in Japan):**

**(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: <https://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](mailto: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: <https://www.grips.ac.jp/en/>

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

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

4) E-mail: [admissions@grips.ac.jp](mailto:admissions@grips.ac.jp)

5) 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:** In principle, JICA will arrange an economy-class round-trip ticket between an international airport designated by JICA and Japan.

**(2) Travel Insurance:** Coverage is from time of arrival up to departure in Japan. Thus traveling time outside Japan (include damaged baggage during the arrival flight to Japan) will not be covered.

#### **4. Accommodation in Japan:**

Basically, JICA will arrange the following accommodations for the participants in Japan:

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 guide of JICA Tsukuba at its URL:  
<http://www.jica.go.jp/english/contact/domestic/information.pdf>

If there is no vacancy at JICA Tsukuba, JICA will arrange alternative accommodation(s) for the participants

#### **5. Expenses:**

The following expenses in Japan will be provided by JICA:

- (1)** Allowances for meals, living expenses, outfit, shipping and stopover.
- (2)** Expenses for study tours (basically in the form of train tickets)
- (3)** Medical care for participants who become ill after arriving in Japan (the costs related to pre-existing illness, pregnancy, or dental treatment are not included)
- (4)** Expenses for program implementation, including materials
- (5)** 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.

\*Link to JICA HP(English)

[https://www.jica.go.jp/english/our\\_work/types\\_of\\_assistance/tech/acceptance/training/index.html](https://www.jica.go.jp/english/our_work/types_of_assistance/tech/acceptance/training/index.html)

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 course, and other matters.

\*YouTube of “Knowledge Co-Creation Program and Life in Japan” and “Introduction of JICA Center” are viewable from the link below.

Image videos of 'Introduction of JICA Center (YouTube)' show the following information of JICA Centers: Location, Building, Entrance, Reception(Front desk), Lobby, Office, Accommodation(Room), Amenities(Hand dryer), Bathroom(Shower and Toilet), Toiletries, Restaurant, Laundry Room(Washing machine, Iron), ICT Room(Computer for participants), Clinic, Cash dispenser, Gym, Neighborhood

| Part I: Knowledge Co-Creation Program and Life in Japan   |   |
|---|---|
| <a href="https://www.youtube.com/watch?v=SLurfKugrEw">https://www.youtube.com/watch?v=SLurfKugrEw</a> |   |
| Part II: Introduction of JICA Centers in Japan  |   |
| JICA Tsukuba  | <a href="https://www.jica.go.jp/tsukuba/english/office/index.html">https://www.jica.go.jp/tsukuba/english/office/index.html</a> |

## ***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

## **VI. Annex**

***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**

Technical cooperation is people-to-people cooperation that supports partner countries in enhancing their comprehensive capacities to address development challenges by their own efforts. Instead of applying Japanese technology per se to partner countries, JICA's technical cooperation provides solutions that best fit their needs by working with people living there. In the process, consideration is given to factors such as their regional characteristics, historical background, and languages. JICA does not limit its technical cooperation to human resources development; it offers multi-tiered assistance that also involves organizational strengthening, policy formulation, and institution building.

Implementation methods of JICA's technical cooperation can be divided into two approaches. One is overseas cooperation by dispatching experts and volunteers in various development sectors to partner countries; the other is domestic cooperation by inviting participants from developing countries to Japan. The latter method is the Knowledge Co-Creation Program, formerly called Training Program, and it is one of the core programs carried out in Japan. By inviting officials from partner countries and with cooperation from domestic partners, the Knowledge Co-Creation Program provides technical knowledge and practical solutions for development issues in participating countries.

The Knowledge Co-Creation Program (Group & Region Focus) has long occupied an important place in JICA operations. About 400 pre-organized courses 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 is being customized by the different target organizations to address the specific needs, 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, as the first non-Western nation to become a developed country, built itself into a country that is free, peaceful, prosperous and democratic while preserving its tradition. Japan will serve as one of the best examples for our partner countries to follow in their own development.

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 a process of adoption and adaptation, of course, has been accompanied by countless failures and errors behind the success stories.

Through Japan's progressive adaptation and application of systems, methods and technologies from the West in a way that is suited to its own circumstances, Japan has developed a storehouse of knowledge not found elsewhere from unique systems of organization, administration and personnel management to such social systems as the livelihood improvement approach and governmental organization. It is not easy to apply such experiences to other countries where the circumstances differ, but the experiences can provide ideas and clues useful when devising measures to solve problems.

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**