50th Anniversary

INTERNATIONAL TRAINING IN SEISMOLOGY AND EARTHQUAKE ENGINEERING


1960-61


1961-62


1962-63


1963-64


1964-65


1965-66


1966-67


1967-68


1968-69


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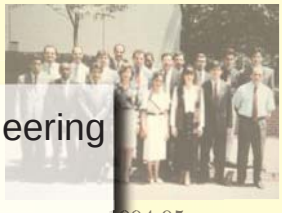

1994-95


1995-96


1996-97

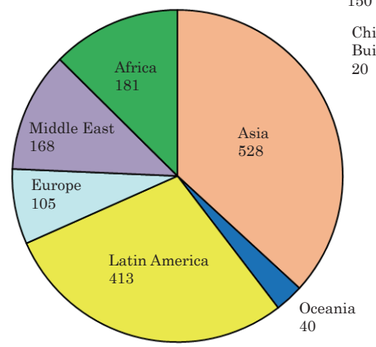

1997-98


1998-99

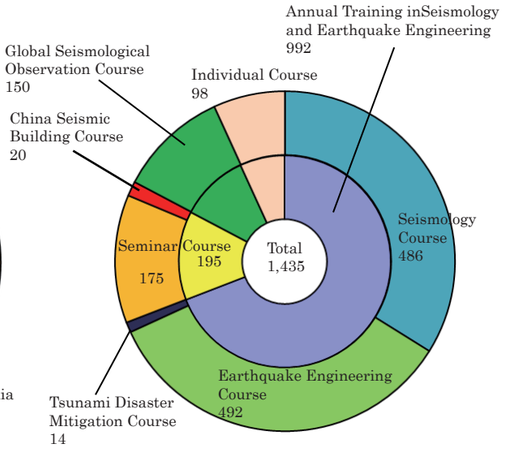

1999-2000

International Institute of Seismology and Earthquake Engineering
Building Research Institute

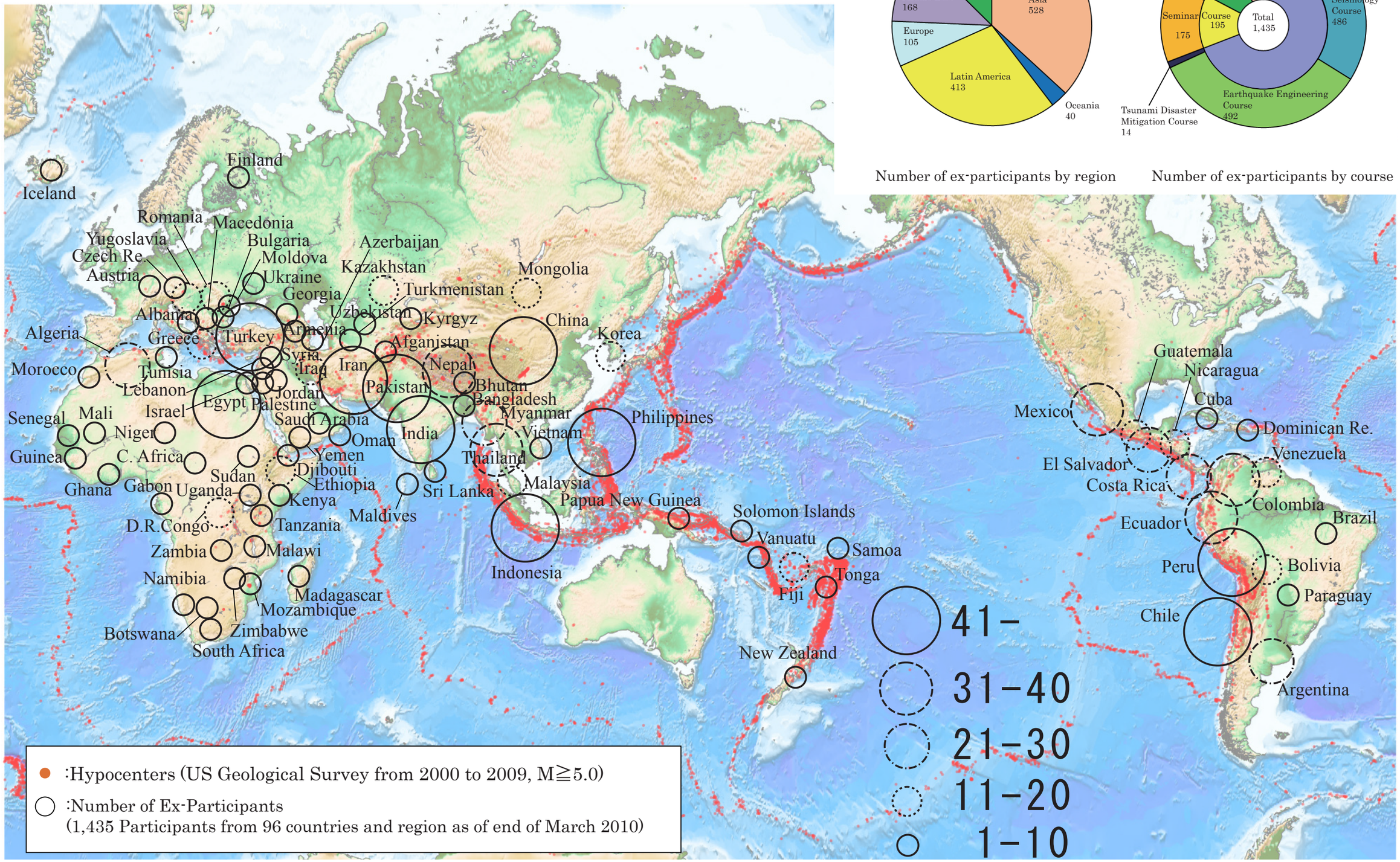
Number and Nationalities of Ex-Participants
– Achievement of 50 years –



Number of ex-participants by region



Number of ex-participants by course



■ Outline of the International Institute of Seismology and Earthquake Engineering (IISEE) and its development ■

In order to contribute to earthquake disaster mitigation, the International Institute of Seismology and Earthquake Engineering (IISEE) at the Building Research Institute (BRI), in cooperation with the Japan International Cooperation Agency (JICA), has provided training courses in seismology and earthquake engineering to researchers and engineers from developing countries. Currently there are four kinds of training programs: Annual Training in Seismology and Earthquake Engineering, China Seismic Building Course (one of the Seminar Courses), a Global Seismological Observation Course, and an Individual Course. These training courses have been highly acclaimed both within Japan and around the world, and to date they have been completed by a total of 1,424 participants from 96 countries.

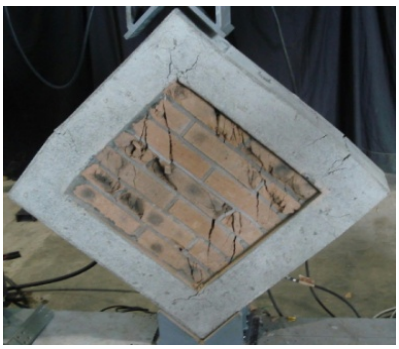
At the Second World Conference on Earthquake Engineering, held in Tokyo in 1960, it was established that there was a need for earthquake engineering training to be provided to young researchers from developing countries who had studied seismology and earthquake engineering. Consequently, the first international training in seismology and earthquake engineering, which consisted of a Seismological Course and an Earthquake Engineering Course, was carried out at the University of Tokyo later that year. The results of the training were widely praised by the international community, and the Japanese government established the IISEE at the BRI in cooperation with UNESCO (United Nations Educational, Scientific and Cultural Organization) in order to maintain these training courses. The first half of the second term of training was held at Waseda University during 1961, with the IISEE taking over for the latter half of the training. Since then, the IISEE has continued to revise its curriculum according to requests from developing countries and in response to the advancement of academics and technology.

1. Annual Training in Seismology and Earthquake Engineering (from 1960 onwards)

1) Seismology Course: This course aims to provide advanced knowledge and technology concerning earthquakes and seismic hazards to trainees who are invited from the organizations responsible for seismic observation and earthquake disaster mitigation in their respective countries. It is also designed to help trainees utilize this knowledge and technology for seismic hazard/risk evaluation and earthquake disaster mitigation policy-making in their native countries. The IISEE incorporates fast-evolving seismological knowledge and seismic observation technology into programs without delay, and is willing to provide not only classroom instruction but also practical training and study tours, as well as participation in international conferences.

Visit to the Nojima Fault Preservation Museum

2) Earthquake Engineering Course: This course provides training to participants who mainly consist of young researchers, engineers and administrative persons from government agencies and universities in their respective countries. Their training is geared towards contributing to the reduction of structural damage caused by earthquakes that can result in human suffering in developing countries. The curriculum comprises basic earthquake engineering studies, covering topics such as structural analysis and structural dynamics; various earthquake resistant structures for reinforced concrete construction, and steel structures; the latest technology, such as seismic isolation and response control technique and seismic limit state design. All of these are systematically provided through lectures, practical training and study tours, enabling trainees to solve problems in their native countries.



Fracture experiment performed for participants

3) **Tsunami Disaster Mitigation Course:** The tsunami disaster mitigation course began in 2006. The gigantic tsunami that was generated by a major earthquake off Sumatran in 2004 wreaked havoc on the coastal regions of the Indian Ocean. To mitigate such tsunami disasters, it is necessary to take disaster mitigation measures based on the latest information regarding earthquakes and tsunamis. This course provides advanced education and technology for dealing with earthquakes and tsunamis, with the aim of training specialists who can apply and disseminate their acquired knowledge and techniques for tsunami disaster mitigation and introduce tsunami hazard evaluation and early-warning systems in their native countries. The initial target countries were coastal nations around the Indian Ocean, but since 2009 the scope of the course has been expanded to include countries around the Pacific Ocean.

Visit to facilities for tsunami disaster prevention in Tohoku / Sanriku District

2. China Seismic Building Course (from 2009 onwards)

On May 12, 2008, a magnitude 7.9 earthquake in Wenchuan, Sichuan Province in the People's Republic of China caused extensive damage, leaving 69,185 dead, 374,171 injured, 18,404 still missing and 23.143 million households damaged, including the collapse of 6.525 million houses. The BRI launched its China Seismic Building Course in October 2009 as part of the "Human Resource Development Project for Aseismic Buildings", carried out by JICA as a supportive reconstruction measure in response to the earthquake disaster in China. This is a two-month training course, and around 20 engineers participate in the course every year. Once their training is complete, engineers return to their respective countries to implement and disseminate their newly acquired technology and knowledge. The project aims to educate about 5,000 structural technology specialists over the course of three years.

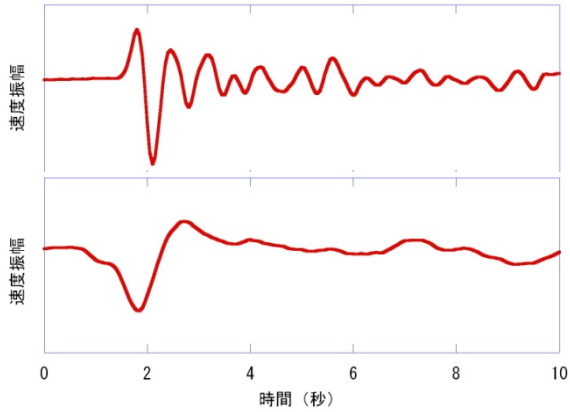
Short-term training courses focusing on specific themes such as this have been carried out since 1980. These are generically referred to as "Seminar Course".

Group photo taken at the completion of the first lecture of the 2009 term

3. Global Seismological Observation Course (from 1995 onwards)

The international community is making efforts to put the Comprehensive Nuclear-Test-Ban Treaty (CTBT) into effect, and to complete the International Monitoring System (IMS) for CTBT-compliance verification. Observation technology using seismological techniques plays an important role in the IMS.

At the request of the Ministry of Foreign Affairs, the IISEE launched a global seismological observation training course in 1995 in cooperation with the Japan Metrological Agency and JICA as a part of Japan's contribution to nuclear disarmament. The IISEE has contributed to the development of human resources who have acquired the skills necessary for detecting nuclear tests through seismic observation as well as the data analysis techniques required for identifying nuclear tests, and are expected to play important roles in the CTBT and IMS.



Waveforms of nuclear tests (above) and natural earthquakes occurring near the testing sites (below)

Lectures and practical training with regard to the use of seismometers

4. Individual Course (from 1968 onwards)

Under the Individual Course, which is designed for students with high scholastic ability and talent, the IISEE provides individual training programs that match the needs of each participant's country. In a recent example, two Egyptians who were awarded scholarships by the Higher Education Ministry of Egypt stayed at the IISEE for three months, during which time they studied site effects from seismic motion and earthquake swarms under the guidance of IISEE staff'.

■IISEE graduate who go on to play important roles in various fields in their native countries■

Researchers who have been sent to the IISEE by their governments, national research institutes and universities from various countries contribute to the mitigation of earthquake disasters in their native countries after completing their training. Some IISEE graduates have become ministers, institution directors, or university rectors, and many actively participate as leaders in the fields of seismology and earthquake engineering. Following are some examples:

Dr. Harsh Gupta of India (1966-67 Seismological Course) held the post of Secretary to the Government of India for the Department of Oceanic Development, the Director of the Indian National Geophysical Research Institute, and he was the first Chairman of the Asian Seismological Society. At the end of 2008, he received a Waldo E. Smith medal from the American Geophysical Union.

Dr. Djoko Santoso of Indonesia (1978-79 Seismological Course) is the current rector of The Bandung Institute of Technology in Indonesia.

Many researchers have come to Japan from the National Research Institute of Astronomy & Geophysics (NRIAG) in Egypt. Dr. Rashad Kebeasy (1965-66 Seismological Course) is the former President of the NRIAG and was also Head of the International Data Center in Provisional Technical Secretariat of the Comprehensive Test Ban Treaty Organization (CTBTO). Dr. Salah Mohamed (1982-83 Seismological Course) is the current President of the NRIAG in Egypt.

The largest number of researchers has come from Peru, with 107 participants to date. Dr. Julio Kuroiwa (1961-62 Earthquake Engineering Course) is a leader in the field of earthquake engineering in his country. He appeared on television as a commentator every day during the Peru Pisco earthquake in 2007. Dr. Robert Morales (1970-71 Earthquake Engineering Course) was the rector of the National University of Engineering in Peru until 2008.

Dr. Federico David Guendel Umana (1975-76 Seismological Course) from Costa Rica is now the Head of the International Monitoring System (IMS) in the Provisional Technical Secretariat of the CTBTO.

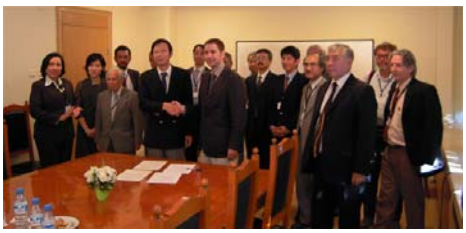
Dr. Gupta at a alumni meeting held during a meeting of the Asian Seismological Society

Mr. Kuroiwa on television (courtesy by the United Nations Center for Regional Development)

■Development of international cooperation: the UNESCO Project■

In cooperation with UNESCO, the Japanese government offered annual training courses in Seismology and Earthquake Engineering for a period of nine years from 1963 onwards. UNESCO and the IISEE have been working together constantly since that time. Currently the formulation of an international network of research and training for the prevention of earthquake disasters in the field of buildings and housing, as well as an international backup system to guard against massive earthquakes and tsunamis (International Platforms for Reducing Earthquake Disaster (IPRED) through buildings and housing), is under way in collaboration with the Ministry of Land, Infrastructure, Transport and Tourism, UNESCO, and the IISEE in the BRI. Through these activities, the IISEE has obtained the cooperation of research institutes from eight countries (Chile, Egypt, Indonesia, Kazakhstan, Mexico, Peru, Romania, and Turkey) that have previous experience of JICA projects relating to earthquake disaster mitigation, as executed by the BRI. Collaborative research is also being conducted together with these partners.

http://iisee.kenken.go.jp/?p=ipred



Dr. Hurukawa, Director of the IISEE, shakes hands with the Head of an Institute in Romania after entering into joint research with this partner country

United Nations
Educational, Scientific and
Cultural Organization

UNESCO logo

■Master's Degree■

Through a partnership with the National Graduate Institute for Policy Studies (GRIPS) initiated in October 2005, part of the training course of the Annual Training in Seismology and Earthquake Engineering has been certified as a GRIPS lecture course. Today, each trainee can obtain a master's degree (Master of Disaster Mitigation) certified by GRIPS and BRI if the required credits are obtained. In September 2006, all 19 participants became the first graduates under the new system. With diplomas, participants secure their complete background as specialists in seismology and earthquake engineering back in their native countries. The Tsunami Disaster Mitigation Course, introduced in 2006, is also regarded as a master's degree program.

Awarding of the master's degree by Dr. Murakami, Chief Executive of BRI

■Transmitting information overseas■

The IISEE is accumulating a database of earthquake information and training information, and is making it available to the world via its website (http://iisee.kenken.go.jp/).

The earthquake disaster prevention technology information network (IISEE Net) releases to the public information related to the mitigation of building disasters due to earthquakes (http://iisee.kenken.go.jp/net/). IISEE Net accumulates technical information (seismic design code, seismic network and activities, seismic damage, and microzonation) from 91 countries, mainly consisting of developing nations. IISEE Net is updated based on information from researchers who were trained at the IISEE. There are also web pages showing strong motion observation conducted by the BRI, reports of recent earthquakes, a catalog of damaging earthquakes in the world (the "Utsu Catalog"), an IISEE Earthquake Catalog, and the above-mentioned IPRED. As for information on training courses, English lecture notes are computerized so that anyone can download them from the website (subscription required). In addition, the information is sent to developing countries in various formats, including special lectures using video conferencing systems, e-learning systems, and synopses (summaries of the master's degree reports written by trainees) that can be browsed.

The IISEE website and the seismic network in Costa Rica

As of the end of December 2009

Classification			Field	Capacity	Timeframe (time of year)	When the training courses began, and special instructions	Number of those who have completed the course	Number of those who have completed the courses
International Training in Seismology and Earthquake Engineering	Annual Training in Seismology and Earthquake Engineering	Seismology Course	Seismology	10	Approximately 1 year (October to following September). First 8 months: lectures in a group Last 3 months: individual specific training	1960 Master's degree available since 2005	486	992
		Earthquake Engineering Course	Earthquake Engineering	10			492	
		Tsunami Disaster Mitigation Course	Tsunami	5		2006 Master's degree available	14	
	Seminar Course	China Seismic Building Course	Earthquake Engineering	20	2 months	2009	20	195
		Others	Seismology and Earthquake Engineering	10 to 20	1 to 2 months	1980	175	
	Global Seismological Observation Course		Seismology	10	2 months (January to March)	1995	139	
	Individual Course		Seismology and Earthquake Engineering	Flexible	On a voluntary basis	1968	98	

Total: 1,424 ex-participants

On the occasion of the 50th anniversary of the IISEE, it is a pleasure for me to send my warmest congratulations, and express my deep gratitude to its present and past members. I participated in the 1961-62 EE Regular Course, and in the 1975-76 Individual Course. The IISEE opened up to me a broad view of multihazard risk reduction, focused on buildings' seismic safety including site effects. So a number of projects were developed in Peru, for example: A new course on EE, a new Seismic Code, and the confined masonry method. The Sustainable Cities Program developed the hazard maps of over 130 Peruvian cities from 1998 to early 2010; all of them with favorable impacts on the country.

Dr. Julio Kuroiwa, Professor Emeritus, National University of Engineering Lima, Peru
(1961-62 E Course, 1975-76 Individual Course)

Capacity building in developing countries affected by earthquakes has always been the driving force behind the training programs established by the IISEE. During all these years, participants of the different training activities have benefited from the best knowledge-transfer available any where in the world, spanning from Seismology and Earthquake Engineering to Tsunamis and Global Seismological Observation. I would like to congratulate the IISEE in reaching this important milestone of 50 years of experience in supporting human and social development in many regions of the world.

Dr. Federico David Guendel Umana, Director, International Monitoring System Division,
Preparatory Commission for the Comprehensive Test Ban Treaty Organization (CTBTO)
(1975-76 S Course)

We are living on dynamic crust of the earth. Some areas are located in the earthquake zones. We should live together with these disaster phenomena through adaptation and mitigation. The IISEE is an international reputable training and learning institution in seismology and earthquake engineering. Besides learning of science and engineering on earthquakes and related knowledge, in the IISEE we can learn international environment and also Japanese culture. The IISEE will have 50 years experience as a learning institution by 2010. I believe that the IISEE will be more mature and contribute to more support for human sustainability using Japanese modern technology on earthquake disaster mitigation.

Dr. Djoko Santoso, Rector, The Bandung Institute of Technology, Indonesia (1978-79 S Course)

International Institute of Seismology and Earthquake Engineering
Building Research Institute
1 Tachihara, Tsukuba, Ibaraki 305-0802 Japan
TEL.+81-29-879-0680 FAX.+81-29-864-6777
URL:http//iisee.kenken.go.jp/
e-mail:iisee@kenken.go.jp