Training courses of International Institute of Seismology and Earthquake Engineering, Building Research Institute in the fields of Seismology, Earthquake Engineering, and Tsunami Disaster Mitigation

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Abstract

The International Institute of Seismology and Earthquake Engineering (IISEE) of the Building Research Institute (BRI) has been providing training courses in the fields of seismology, earthquake engineering, and tsunami disaster mitigation for participants from developing countries. Currently, the IISEE is providing the following group training courses: the regular (one year) courses, the Global Seismological Observation course, and the Earthquake Engineering for Latin America course. There are three one year courses: seismology, earthquake engineering, and tsunami disaster mitigation courses. The one year courses are provided under cooperation with the JICA, the MLIT, and the National Graduate Institute for Policy Studies (GRIPS). From the 2005-2006 course, a part of the curriculum of these one year courses has been approved as a Master's degree program by the GRIPS and the BRI. We introduce the curricula of the one year courses, their application procedures, and subjects of recent studies of course participants.

Keywords: training, seismology, earthquake engineering, tsunami

1. INTRODUCTION

The International Institute of Seismology and Earthquake Engineering (IISEE) of the Building Research Institute (BRI) has been providing training courses in the fields of seismology, earthquake engineering, and tsunami disaster mitigation for participants from developing countries under the cooperation with Japan International Cooperation Agency (JICA) and the Ministry of Land, Infrastructure, Transport and Tourism (MLIT). Currently, the IISEE is providing the following courses:

- the regular (one year) courses. The training period is about one year. Some details are explained in the next section.
- the Global Seismological Observation course. This course has been provided since 1995 by the request of the Ministry of Foreign Affairs of Japan as a part of Japan's contribution to nuclear disarmament with the Japan Metrological Agency and JICA. The training period is about two months.
- the Earthquake Engineering for Latin America course. This course has been providing for enhancement and dissemination of earthquake resistant technology for buildings in Latin American Countries since 2014. The training period is about two months. The language is Spanish.

2. REGULAR COURSES: "SEISMOLOGY, EARTHQUAKE ENGINEERING and TSUNAMI DISASTER MITIGATION"

There are three regular (one year) courses: seismology, earthquake engineering, and tsunami disaster mitigation courses. The one year courses are provided under cooperation with the JICA, the MLIT, and the National Graduate Institute for Policy Studies (GRIPS). The JICA training course title is "Seismology, Earthquake Engineering, and Tsunami Disaster Mitigation". From the 2005-2006 course, a part of the curriculum of these one year courses has been approved as a Master's degree program by the GRIPS and the BRI.

Application procedure for this courses is as follows. The Ministry of Foreign Affairs of Japan and JICA will survey needs of JICA group training and region-focused training courses in each developing country around July every year. Candidate countries are decided through this survey. The general information of this training is distributed to each candidate country through JICA. JICA receives applications through their local office or Japanese embassy.

Table 1 shows the curricula of these courses. In the individual study, each participant conducts a research on a specific subject. The typical subjects of the three courses are shown in Table 2. In this presentation, we introduce recent studies conducted by course participants.

Table 1: The curricula of the regular courses. The titles of lectures are shown in the left column. A course which includes that lecture in its curriculum is shown in the right column. S, E, and T denotes the seismology, earthquake engineering, and tsunami disaster mitigation courses, respectively.

Title	Courses
Disaster Management Policies A	SET
Disaster Management Policies B	SET
Earthquake Hazard Assessment A	SE
Earthquake Hazard Assessment B	S
Earthquake Risk Assessment	E
Earthquake Tsunami Disaster Management and Development Assistance	SET
Tsunami Hazard Assessment	T
Tsunami Countermeasures	T
Earthquake Phenomenology	ST
Earthquake Circumstance	ST
Characteristics of Earthquake Disasters	S
Information Technology Related with Earthquakes and Disasters	ST
Structural Analysis	E
Ground Vibration and Structural Dynamics	E
Seismic Structures	E
Seismic Evaluation and Seismic Design Code	E
Theory of Tsunami	T
Practice for Earthquake Disaster-Recovery Management Policy I	SET
Practice for Earthquake Disaster-Recovery Management Policy II	SET
Practice for Earthquake Disaster-Recovery Management Policy III	SE
Case Study (Practice for Tsunami Disaster Mitigation Policy	T
Individual Study	SET

Table 2: Typical subjects of individual studies of the three courses.

Courses	Subjects
Seismology	Earthquake Source Parameters Earthquake Source Process Crustal Structure Earthquake Generation Process Strong Motion Simulation Site Effect Studies Geophysical Prospecting
Earthquake Engineering	Seismic Performance Design Method Seismic Evaluation and Retrofitting Techniques Seismic Isolation and Response Control Techniques Nonlinear Earthquake Response Analysis and Damage Evaluation System Identification and Health Monitoring Effect of Soil Structure Interaction Urban Planning for Earthquake Disaster Mitigation and Recovery Post-earthquake Damage Inspection Method
Tsunami Disaster Mitigation	Tsunami Simulation Tsunami Source Tsunami Hazard Assessment Tsunami Database for Tsunami Early Warning System Rapid Determination of Earthquake Parameters for Tsunami Early Warning System Real Time Usage of Tsunami Data for Tsunami Early Warning System