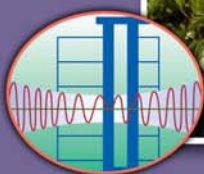


# **International Training Program for Seismic Design of Structures**

October 26-30, 2009    Taipei, Taiwan

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## **General Information**



National Center for Research on Earthquake Engineering



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## • Overview

The National Center for Research on Earthquake Engineering (NCREE) of Taiwan R.O.C. provides a variety of research programs related to earthquake engineering. These research programs encompass basic researches about seismic design and engineering of building and bridge structures. In complying with the objective, "International Cooperation on Research and Training Programs," of the National Science Council (NSC) of Taiwan R.O.C., the NCREE organizes a short-term training program on the seismic design of structures. The first training program (ITP 2002) was held on January 21-25, 2002, the second one (ITP 2003) was held on October 13-17, 2003, the third (ITP 2004) was held on October 25-29, 2004, the fourth (ITP 2005) was held on October 24-28, 2005, the fifth (ITP 2006) training program was held on October 23-27, 2006, the sixth (ITP 2007) training program was held on October 22-26, 2007, the seventh (ITP 2008) training program was held on October 20-24, 2008, and the coming eighth **(ITP 2009) training program will be held on October 26-30, 2009**



## Background

Recent major earthquakes that occurred around the Pacific Rim, such as the Loma Prieta earthquake (USA, 1989), Northridge earthquake (USA, 1994), Kobe earthquake (Japan, 1995), Izmit earthquake (Turkey, 1999), Chi-Chi earthquake (Taiwan, 1999), Southern Sumatra (Indonesia, 2000), Bhuj-Ahmadabad-Rajkot earthquake (India, 2001), San Miguel (El Salvador, 2001), Baghlan earthquake (Afghanistan, 2001), Xinjiang earthquake (China, 2002), Algiers-Bourmerdes-Thenia earthquake (Algeria, 2003), Sumatra-Andaman earthquake (Indonesia, 2004, causing the Asian Tsunami), South Asia earthquake (Pakistan and India, 2005), Yogyakarta earthquake (Indonesia, 2006), Wen-Chuan earthquake (China, 2008), and etc., have caused serious casualties and property losses in the affected areas. Therefore, it is necessary to promote the seismic design technology to mitigate the seismic hazard caused by the high seismicity of the Pacific Rim. Thus, the training program for the researchers and practical engineers from other countries should be considered as one of the necessary actions that should be taken to approach the goal.



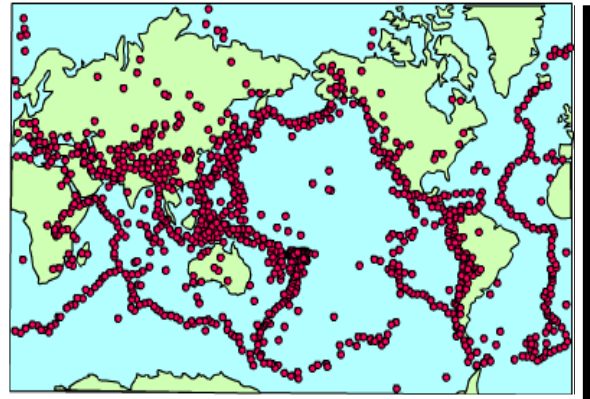


The World Seismic Safety Initiation(WSSI) under the International Association for Earthquake Engineering (IAEE) suggested recently to the major countries such as the United States, Canada, Japan, New Zealand and Taiwan the establishment of training program like the activity organized by NCEE under the funding of the National Science Council of Taiwan for the researchers and engineers from other countries.

### Venue

The program is to be held at the National Center for Research on Earthquake Engineering (NCEE), Taipei, Taiwan. (<http://www.ncee.gov.tw/eng/index.htm>).

As the capital of this country, Taipei is a vibrant blend of traditional culture and cosmopolitan life. Taipei is the political, economic, educational and recreational center of the country with a population of more than three million and with large numbers of significant cultural sights located throughout the city (<http://english.taipei.gov.tw/>). While the city has been modernized completely in the past, half a century ago, it nevertheless preserves the cultural traditions of Chinese history. The National Palace Museum (<http://www.npm.gov.tw/en/home.htm>) is famous worldwide for its priceless collection of artistic treasures, which represent over 3,000 years of Chinese history. The museum is located in the north of the city and is a must see for lovers of ancient Chinese culture. The eastern section of the city was mostly barren fields until the 1970s when the city began to develop the area as a financial and commercial district. This area reveals the modern face of Taipei with its glass and steel skyscrapers, wide boulevards and the World Trade Center. Taipei also boasts dozens of world-class performance venues to enjoy some of the best theater and concert events. The city also offers a wide range of other diversions, with shopping malls, night clubs and music bars, high-quality hotels and exotic restaurants. With the wealth of interesting and fun activities available in Taipei and the city's warm reception extended to guests, foreign visitors are certain to have an unforgettable experience in this remarkable city.







## About NCREE

The National Center for Research on Earthquake Engineering (NCREE, <http://www.ncree.gov.tw/eng/index.htm>) is funded by the National Science Council (NSC, <http://web1.nsc.gov.tw/mp.aspx?mp=7>) in Taiwan. With the joint effort from the National Science Council and the National Taiwan University (NTU), the National Center for Research on Earthquake Engineering was established in 1990. Since then, the institution has worked endlessly to upgrade seismic resistant design standards for all constructions and to provide feedbacks for the engineering community through research and development. It is hoped that through the coordinated activities of NCREE, the enthusiasm to conduct high-quality research will be stimulated to bring out the full potential of its participants. These activities will include the holding of seminars and workshops on a regular basis in which knowledge can be advanced and improved continually. In addition, special emphasis has been and will continually be given to technology transfer in the engineering professions for enhanced seismic-resistant designs.



## Earthquake Engineering Research and Practice in the Participating Countries

In order to share knowledge and experiences among different countries, each participating country is supposed to give a presentation, showing the situations or development of the country including (but not limiting) one or more than one of the following topics: building design codes, structural engineering, engineering material, seismology, seismic hazard, geotechnical engineering, and soil-structure interaction. **Each presentation takes about 20 minutes, including 5 minutes of discussion.**

The presentation facilities we provide include a notebook computer (with a CD-ROM drive, Microsoft Windows operating system, and Microsoft Office software), a projector connecting to the notebook, a transparency projector, and a laser pointer. If you need any other facilities, please tell to the contact person in advance.

**Please kindly send the presentation file by e-mail to both Dr. Shang-Yi Hsu ([syhsu@ncree.org.tw](mailto:syhsu@ncree.org.tw)) and Mr. Chun-Yi Lin ([cylin@ncree.org.tw](mailto:cylin@ncree.org.tw)) before you depart and do not forget to bring the file (in a CD-ROM or USB flash drive) in case of technical problems.**



## Travel Support

**ITP2009** will pay the participants' flight fee (sponsored by the National Science Council in Taiwan), which covers the round-trip flight fee between one's country and Taipei, Taiwan (the Taoyuan International Airport). There are upper bounds of the flight fee support (country dependent). Nevertheless, our experiences tell us that the flight fee is mostly lower than the upper bounds. We will inform the participants about the upper bound when we send the notification of acceptance.

**The flight should be arranged on each participant's own in advance. NCREE will reimburse the flight fee in New Taiwan Dollars at the end of the training program.** For our accounting system, a receipt of the ticket purchase (issued by a travel agency), an E-ticket receipt, which must have the passenger's name, the flight schedule, and the amount of the flight fee on it, and the stub of the boarding pass of each flight are required for the reimbursement. We will take them and settle with a lowest price between them. Please note that the ticket itself is not a receipt. **If the receipt is not listed in USD, please bring the exchange rate voucher.**

## Hotel Accommodation

NCREE will arrange a 6-night single-room accommodation (**check-in on October 25 evening and check-out on October 31 morning**) for each participant at the Howard International House (<http://intl-house.howard-hotels.com/>). If participant wants to advance or extend the room, he or she needs to pay the extra fee. The rate is about 60 USD per night for a single room. If one has the need, please contact us.

## Local Transportations

**We DO NOT provide airport pick-up service.**

### ● Taoyuan International Airport to Howard International House

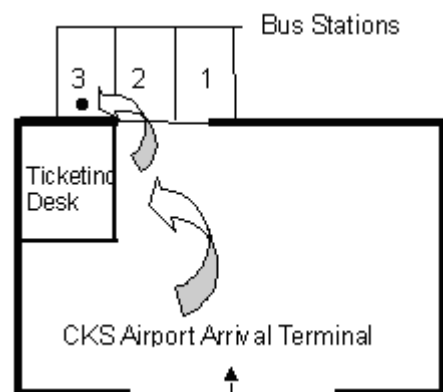
We suggest you to

Step 1: Take the airport shuttle bus to Taipei Main Station (台北車站)

Six bus companies provide frequent service between Taoyuan International Airport and important destinations in Taiwan. Take final destination at Taipei Main Station.

Buy a ticket at Ticketing Desk. The purchase price is around **150 New Taiwan Dollars (TWD)** per person.

The bus leaves every 20 to 30 minutes, and takes around 60 to 90 minutes to Taipei. Remember to get off the bus at Taipei Main Station.





Step 2: Take a taxi from Taipei Main Station to Howard International House. Show the driver the following Chinese instruction note (as shown at the bottom of this page) to your hotel.

When the taxi arrives at your hotel, you may see the taximeter in the taxi, which shows the fee, and give extra 10 TWD if you use the rear trunk of taxi. Generally speaking, the total taxi fee could be up to **150~200 TWD** from Taipei Main Station to the hotel.

You can also take a taxi from the airport directly to the hotel. Taxis queue outside the Arrival Halls of both terminals. To ensure the safety of passengers, only taxis approved by the Aviation Police Bureau after a strict qualification procedure are cleared to operate in CKS Airport. Airport Taxis charge according to the meter plus a 50% surcharge (highway tolls not included). Typical fare to Taipei is around NT\$1,100.

After you get in the Taxi, show the taxi driver taxi driver the destination notices below (the characters have been transformed into graph to be correctly showed on screen and printed, and if there is any problem, please contact us).

### **NCREE:**

國家地震工程研究中心

National Center for Research on Earthquake Engineering

台北市大安區辛亥路三段200號

200, Sec. 3, HsinHai Rd., Taipei 106, Taiwan

TEL: +886-2-6630-0888 (domestic: 02-6630-0888)

### **HOTEL:**

福華國際文教會館

Howard International House

台北市大安區新生南路三段30號

30, Sec. 3, HsinSheng South Rd., Taipei 106, Taiwan

TEL: +886-2-8369-1155 (domestic: 02-8369-1155)

As for the mass transportation in Taipei, please refer to:  
[http://www.taipeibus.taipei.gov.tw/index\\_e.htm](http://www.taipeibus.taipei.gov.tw/index_e.htm) (Taipei City Bus)  
<http://www.trtc.com.tw/e/> (Taipei MRT)



Howard International House

NCREC

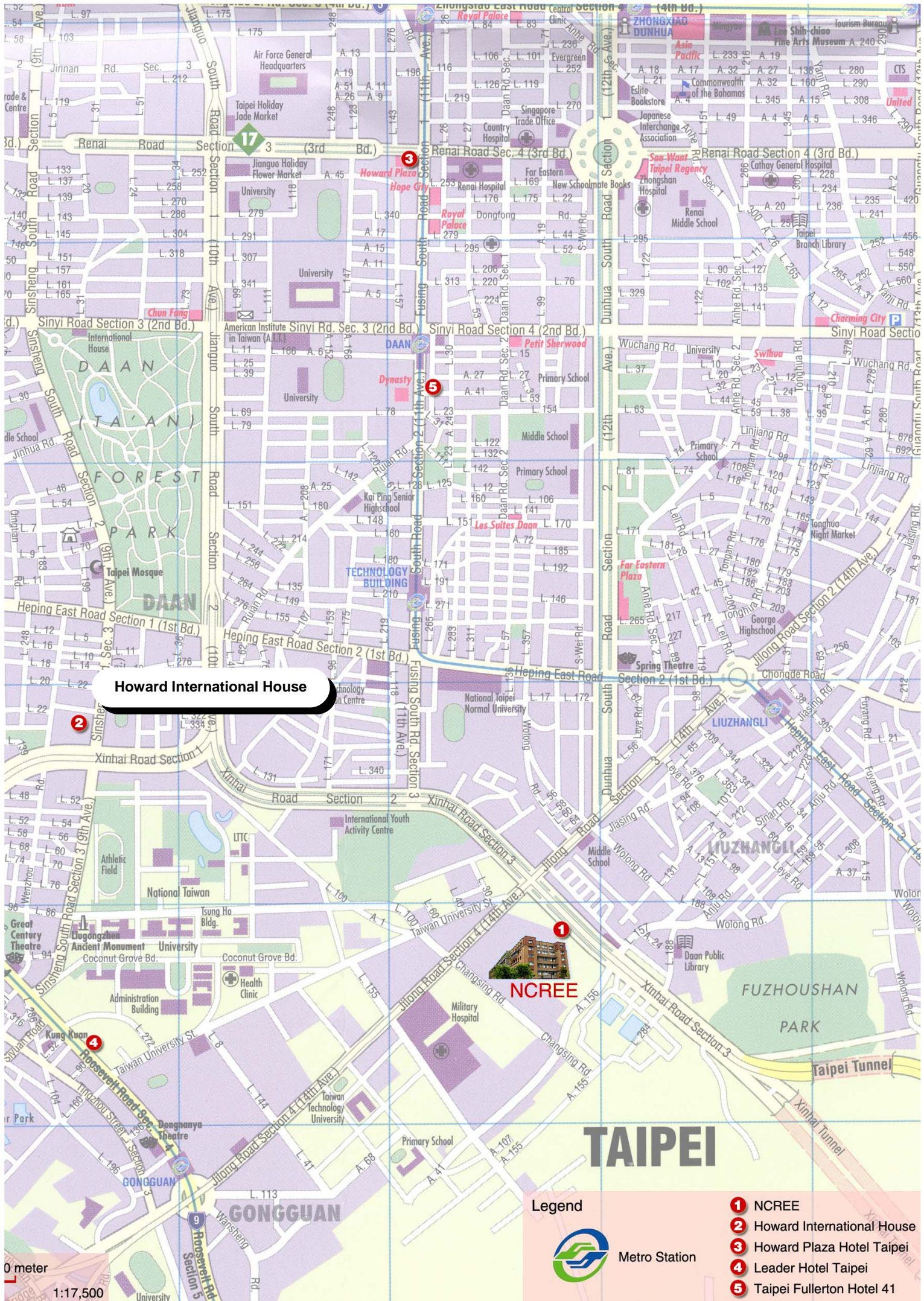
TAIPEI

Legend



Metro Station

- 1 NCREC
- 2 Howard International House
- 3 Howard Plaza Hotel Taipei
- 4 Leader Hotel Taipei
- 5 Taipei Fullerton Hotel 41



0 meter  
1:17,500



Oct. 26-30



- **Between Howard International House and NCREE**

We arrange a bus transport running from Howard International House to NCREE in the morning and back in the afternoon during **October 26 to 30** (see the schedule). If you want to go by bus, please assemble on schedule. Do not expect that the bus will wait.

If you want to go by walking, the foregoing map maybe helpful. The Howard International House and NCREE are at corners of National Taiwan University. **Walking from Howard International House to NCREE may take 25 minutes.**



## Meal Arrangements

### ● Breakfast

As most of the hotels, Howard International House provides each guest a standard breakfast. You can enjoy your breakfast from **October 26 to 31** (six mornings) for free.

### ● Lunch

We provide lunches at NCREE **from Oct. 26 to Oct. 30**. Only vegetarian diet and non-vegetarian diet are provided for lunch. **Please make a notification in advance if you need a vegetarian diet.**

### ● Dinner

We provide dinner coupons **from Oct. 25 to Oct. 30** at the Howard International House (service hour: 18:00-21:00). However, if your arriving time is too late to have dinner on Oct. 25, please arrange it by yourself.

## Money Exchange

You can exchange money in Taoyuan International Airport. Since we DO NOT provide the airport pick-up service and since the reimbursement of the flight fee will be made at the end of the training program, please prepare sufficient Taiwan Dollars for local transportation and other necessary expense.

The exchange rate is available at following page, which always updates. Extra exchange fee may be around 100 to 150 Taiwan Dollars.

<http://rate.bot.com.tw/Pages/Static/UIP003.en-US.htm>

## Check List

Remember to bring the following items to Taiwan for the program:

- ☐ **Passport**
- ☐ **Flight fee invoice or receipt issued by a travel agency or the payment confirmation if you purchase your ticket on-line.**
- ☐ **E-ticket itinerary/receipt (must has the passenger's name, the flight schedule, and the amount of the flight fee on it)**
- ☐ **Boarding pass stubs of all the flights (domestic and international) (For the flights after leaving Taiwan, please send the stubs back by air-mail)**
- ☐ **If the flight fee invoice or receipt is not listed in USD, please bring the proof of the exchange rate issued by the bank (exchange rate voucher).**
- ☐ **File(s) of your presentation.**
- ☐ **Books, reports, or data about seismic design for possible discussion.**
- ☐ **Some Taiwan Dollars (at least for the transportation from the airport to the hotel).**





## Speakers

Name	Organization
Dr. Juin-Fu Chai	National Center for Research on Earthquake Engineering
Dr. Fu-Pei Hsiao	National Center for Research on Earthquake Engineering
Dr. Chun-Lin Wu	National Center for Research on Earthquake Engineering
Dr. Tao-Ming Chang	National Center for Research on Earthquake Engineering
Dr. Jiunn-Shyang Chiou	National Center for Research on Earthquake Engineering
Dr. Shang-Yi Hsu	National Center for Research on Earthquake Engineering
Mr. Chih-Yu Wei	National Center for Research on Earthquake Engineering
Mr. Chao-Hsien Li	National Center for Research on Earthquake Engineering
Ms. Ching-Yi Tsai	National Center for Research on Earthquake Engineering
Dr. Hsiao-Hui Hung	National Center for Research on Earthquake Engineering
Dr. Kuang-Yen Liu	National Center for Research on Earthquake Engineering
Dr. Chin-Kuo Su	CECI Engineering Consultants, Inc.
Prof. Yu-Chen Ou	National Taiwan University of Science and Technology
Dr. Pei-Yang Lin	National Center for Research on Earthquake Engineering
Dr. Keng-Chang Kuo	National Center for Research on Earthquake Engineering
Ms. Fan-Ru Lin	National Center for Research on Earthquake Engineering
Mr. Ming-Chieh Chuang	National Center for Research on Earthquake Engineering
Mr. Yi-Jer Yu	National Center for Research on Earthquake Engineering
Dr. Chin-Hsun Yeh	National Center for Research on Earthquake Engineering
Dr. Tzu-Kun Lin	National Center for Research on Earthquake Engineering
Mr. Chang-Ching Chang	Evergreen Consulting Engineering, Inc.
Dr. Zhang-Kuan Lee	National Center for Research on Earthquake Engineering



## Schedule

### October 26 (Monday)

- |             |  |
|-------------|--|
| 08:30       | <b>Leave Howard International House for NCREE</b><br>Assembly at Howard International House Lobby  |
| 09:00-09:30 | <b>Opening Ceremony</b><br>Prof. C. R. Chang,<br>Director General, Department of International Programs, NSC<br>Prof. K. C. Tsai,<br>Director, NCREE |
| 09:30-10:00 | <b>Recent Research Activities at National Center for Research on Earthquake Engineering (NCREE)</b><br>Prof. K. C. Tsai, Director, NCREE             |
| 10:00-10:20 | <i>Coffee break</i>  |
| 10:20-12:00 | <b>Earthquake Engineering Research and Practice in India, Philippines, Thailand, and Vietnam</b><br><b>(25mins for each country)</b>                 |
| 12:00-13:00 | <i>Lunch break</i>   |
| 13:00-14:15 | <b>Earthquake Engineering Research and Practice in Indonesia, Malaysia, and Mongolia (25mins for each country)</b>                                   |
| 14:15-14:30 | <i>Coffee break</i>  |
| 14:30~15:45 | <b>Earthquake Engineering Research and Practice in Jordan, Mexico, and Peru (25mins for each country)</b>  |
| 15:45-16:00 | <i>Coffee break</i>  |
| 16:00-17:15 | <b>Earthquake Engineering Research and Practice in Dominican Republic, El Salvador, Guatemala (25mins for each country)</b>                          |
| 17:15       | <b>Leave NCREE for Howard International House</b>  |





**October 27 (Tuesday)**

- 08:30           **Leave Howard International House for NCEE**  
Assembly at Howard International House Lobby
- 09:00-10:00   **Development of Seismic Force Requirements for Buildings in Taiwan**  
Dr. J. F. Chai
- 10:00-10:15   *Coffee break*
- 10:15-11:15   **Seismic Evaluation and Retrofit of Existing School Buildings**  
Dr. F. P. Hsiao and Dr. C. L. Wu
- 11:15-11:30   *Coffee break*
- 11:30-12:30   **Advanced Steel Structures**  
Dr. K. C. Lin, Mr. C. Y. Wei, Mr. C. H. Li, and Ms. C. Y. Tsai
- 12:30-13:30   *Lunch break*
- 13:30-14:30   **Strong Motion Observations, Microtremor Application, Earthquake Precursor Study, and Earthquake Early Warning System in Taiwan**  
Dr. T. M. Chang
- 14:30-14:45   *Coffee break*
- 14:45-15:45   **Geotechnical Hazards During the Sep. 21, 1999, Chi-Chi Earthquake**  
Dr. J. S. Chiou
- 15:45-16:00   *Coffee break*
- 16:00-17:00   **Seismic Evaluation and Earthquake Loss Estimation for Port Structures in Taiwan**  
Dr. S. Y. Hsu
- 17:00           **Leave NCEE for Howard International House**
- 18:00-20:00   **Banquet**



### October 28(Wednesday)

- |             |   |
|-------------|---|
| 08:30       | <b>Leave Howard International House for NCEE</b><br>Assembly at Howard International House Lobby        |
| 09:00-10:00 | <b>Seismic Design for Bridges in Taiwan</b><br>Dr. H. H. Hung and Dr. K. Y. Liu                         |
| 10:00-10:15 | <i>Coffee break</i>   |
| 10:15-11:15 | <b>Seismic Evaluation of Existing Bridges</b><br>Dr. K. Y. Liu  |
| 11:15-11:30 | <i>Coffee break</i>   |
| 11:30-12:30 | <b>Seismic Behavior and Design of Precast Segmental Concrete Bridge Columns</b><br>Prof. Y. C. Ou       |
| 12:30-13:30 | <i>Lunch break</i>  |
| 13:30-14:30 | <b>Introduction and Application of Seismic Passive and Semi-Active Control</b><br>Dr. P. Y. Lin         |
| 14:30-14:45 | <i>Coffee break</i>   |
| 14:45-15:45 | <b>Seismic Performance of Non-Structural Components in Hospitals</b><br>Dr. K. C. Kuo and Ms. F. R. Lin |
| 15:45-16:00 | <i>Coffee break</i>   |
| 16:00-17:00 | <b>Nonlinear Analysis Techniques of Structures by PISA3D</b><br>Mr. M. C. Chuang and Mr. Y. J. Yu       |
| 17:00       | <b>Leave NCEE for Howard International House</b>  |



Oct. 26-30



**October 29(Thursday)**

- 08:30      **Leave Howard International House for NCREE**  
Assembly at Howard International House Lobby
- 09:00-10:00      **Seismic Disaster Simulation and Its Applications on Early Loss Estimation and Risk Assessment**  
Dr. C. H. Yeh
- 10:00-10:15      *Coffee break*
- 10:15-11:15      **Development and Application of Structural Health Monitoring in Taiwan**  
Dr. T. K. Lin
- 11:15-11:30      *Coffee break*
- 11:30-12:30      **The Repair and Monitoring of an Earthquake-Damaged Cable-Stayed Bridge**  
Dr. Z. K. Lee
- 12:30-13:30      *Lunch break*
- 13:30-14:30      **Structural Design of Taipei 101 Tower**  
Mr. C. C. Chang
- 14:30-14:45      *Coffee break*
- 14:45-15:45      **Tour of NCREE Laboratory Facilities**  
Dr. C. L. Wu, Dr. P. Y. Lin, and Dr. T. K. Lin
- 15:45-16:00      *Coffee break*
- 16:00-17:00      **Closing Ceremony**  
Prof. W. H. Chen  
President, NARL  
Prof. K. C. Tsai,  
Director, NCREE
- 17:00      **Leave NCREE for Howard International House**

**October 30(Friday)**

- 08:30            **Leave Howard International House for Day Trip**  
Assembly at Howard International House Lobby
- 10:30-12:00    **Visit Shih-Kang Dam**
- 12:00-13:00    Go to 921 Earthquake museum from Shih-Kang Dam  
Lunch on the bus
- 13:00-15:30    **Visit 921 Earthquake museum**
- 15:30-16:00    Go to THSR Taichung station
- 16:16-17:06    **Come back to Taipei by Taiwan High Speed Rail (THSR)**

If there are any modifications about the schedule, we will make an announcement at the ITP 2009 web page: <http://w3.ncree.org.tw/itp/2009/>







## About Taipei

Located in northern Taiwan, Taipei is the political, economic, financial, and cultural center of the Republic of China. It has thriving arts and academic scene and countless modern commercial buildings. With its vibrant cultural and economic growth, it has become a modern international metropolis.

(more details: <http://english.taipei.gov.tw/>)

### ● Transportation



**Taipei MRT route:** Taipei's Mass Rapid Transit (MRT) System has four lines connecting the entire city. These include the Mucha, Tamsui, Hsintien, and Nankang lines. These lines offer a great view of the city and a convenient way to go around the town. (more details: <http://www.trtc.com.tw/e/>)

**Taxi:** Taipei's taxi fee is: 70 TWD of basic fee at the beginning 1.65 km, then extra 5 TWD every 0.3 km, and extra 5 TWD every 2.5 minutes when taxi is stopping. The above fee is counted automatically and shown on the electric screen. In addition, you are supposed to pay extra 10 TWD if the rear trunk is used.

### ● Map

You may see the Taipei map at

<http://www.taiwan-map.com/>



### ● Travel Guide Web Sites

You may have some travel guides in the Friends Hotel or see the following web sites: <http://english.taipei.gov.tw/dot/>

### ● Weather

<http://www.cwb.gov.tw/eng/index.htm>

[http://weather.yahoo.com/forecast/TWXX0021\\_f.html](http://weather.yahoo.com/forecast/TWXX0021_f.html)



## ● Pay Phone

You can call domestically or internationally from your hotel room. Before calling through the phone, please check the calling rates with hotel first. Hotel will charge when you check out.

Hotel also provides public pay phones. Due to the popularity of mobile phones, there are fewer and fewer public pay phones on streets. You can select Pre-paid Card or E-Call Card.

(<http://www.cht.com.tw/CHTFinalE/Web/Personal.php?CatID=7>)