

2019 International Training Course on Slope Land disaster Reduction

Organized by



Department of Civil Engineering, National Taiwan University, Taiwan

Sponsored by

Ministry of Science and Technology, Taiwan

Co-organized by

International Consortium on Geo-disaster Reduction (ICGdR)

International Consortium on Landslide (ICL)

Association of Geotechnical Societies in Southeast Asia (AGSSEA)

Taiwan Intelligent Ironman Creativity Contest Association

Taipei, Taiwan, November 3-12, 2019.



1. Introduction

Landslide related disaster has become more and more important as the global warming effect increases. Education has been recognized as the most effective way of reducing the loss due to disasters. International Consortium on Geo-disaster Reduction (ICGdR) was established in 2013 with the aim to reduce the loss from slope land disasters. This course is one of the first activities towards the goal. Taiwan has all kinds of slope land hazards and has many important application researches well enforced locally. Therefore, Taiwan is an ideal location for such a training course. As a member of the landslide society, the Ministry of Science and Technology of Taiwan provides financial support for attendants to this training course as a token to fulfill our responsibility towards a safer world. The course contents cover many practitioner's knowledge as well as new ideas and techniques. This is a rare chance for learning geo-hazard reduction, making friends, and exploring Taiwan.

This Training Course for Slope Land Disaster Reduction was established in 2013, and has been held for five times since then. There were 294 applicants and 147 from 26 countries were selected, including 16 Professors, 19 Ph.D., 34 Masters, 35 Government Officers, and 5 Non-Government Engineers. The training course has been a huge success both on technical merits and friendship point of view. The attendants created their own [facebook connection](#) in 2013. This can be an excellent reference for the interested applicants. This year, we shall host the course within the same framework and improve the course more so that everyone will feel like at home. The course contents have been modified a little according to the experience we gained from the past few years. We hope you'll love the course as much as the participants in 2013, 2014, 2015, 2016 and 2017.

2. Eligibility & Participation

- 2.1 The maximum number of participants for this summer training course is 26.
- 2.2 Eligible to participate is all professionals or students who are either working on or interested in slope land hazard reduction knowledge.
- 2.3 The organization committee has the right to select the most appropriate participants in case the number of applicants exceeds 26. Under equal qualification, the decision will benefit those who registered earlier.

3. Registration and financial support

- 3.1 Participants must pay a registration fee of **800 USD** unless financial support is awarded. The registration fee covers courses, field trip, lodging, all meals, banquets, gifts, culture tour, hotel-airport transportation and field trip cost. The cost for accompany person is 550 USD which includes everything above except the course itself.
- 3.2 Deadline for all applications: August 31, 2019
- 3.3 All application documents must be submitted by the deadline to be considered for admission.
- 3.4 All payment should be given in cash upon arrival or wired to

Taiwan Intelligent Ironman Creativity Contest Association
Account number : 154100006557
Bank : Hua Nan Commercial Bank
Address : No. 1, Sec. 4, Roosevelt Road, Taipei, 10617 Taiwan (R.O.C)
Swift code : HNBKWTWP154
Tel : +886 2 23631478

4. Financial Support

- 4.1 Full financial support includes (1) round trip air tickets, (2) VISA fee, and (3) course registration fee. The possible quota for financial support is 26 persons.
- 4.2 Partial financial support includes course registration fee only. The possible quota for financial support is 6 persons.
- 4.3 The deadline for financial support application is August 31, 2019
- 4.4 The recipients of the financial support will be determined based upon the potential contribution of the applicants after the training. The financial support recipients will be determined by the organizing committee and announced on September 10, 2019.
- 4.5 Then when you arrive at Taiwan, you can receive cash reimbursement after you submit all the original invoices. The host will reimburse your cost in NTD at the welcome party. So please save all the receipts until completing the procedure of reimbursement in Taiwan. The following documents must be provided. Please make sure you have prepared all the required documents listed below.
 - 1) Electronic airplane tickets.
 - 2) The original boarding pass. (the returning boarding pass must be mailed back to us by post)
 - 3) The original invoice of tickets purchased (in English and with the price and currency unit)
 - 4) The original invoice of VISA fee (in English and with the price and currency unit)
 - 5) Copy of passport ID page
 - 6) Copy of passport page with enter stamp of Taiwan (we can help you to copy in welcome party)
 - 7) Copy of passport page with exit stamp of Taiwan (it must be mailed back to us)
- 4.6 Without the documents listed in 4.6, no reimbursement can be made.

5. Schedule (subjected to change)

Date	Time	Activities	Remarks
Date 1		Arrival	
Sunday November 3 rd	18:30-21:00	Registration	
Date 2	09:00-09:30	Opening ceremony	
Monday	09:30-12:00	Training course	
November 4 th	12:00-17:00	Visit Emergency Response Center	
Date 3	09:00-17:00	Training course	
Tuesday November 5 th			
Date 4	09:00-17:00	Training course	
Wednesday November 6 th			
Date 5	08:00-17:00	Field trip to Xiao-Lin Village	
Thursday November 7 th			
Date 6	09:00-12:00	Visit 921 Earthquake Museum	
Friday	13:00-14:00	Visit Soil & Water Conservation Bureau in Taiwan	
November 8 th	14:00-17:00	Field trip to Chiu-fen-erh-shan Landslide	
Date 7	09:00-17:00	Training course	
Saturday November 9 th			
Date 8	09:00-16:00	Training course	
Sunday November 10 th			
Date 9	10:00-15:00	Project report	15min/team
Monday	16:00-17:00	Closing ceremony	
November 11 th	18:00-21:00	Farewell Banquet	
Date 10		Departure	
Tuesday			
November 12 th			

**Note:

1. Attendants who receive full financial support should arrive on Date 1 (November 3rd, 2019).
2. Rules for project report: All teams must give oral presentations using theories or methods learned from the training course on any real case mitigation. Each team consists of 2 persons. Those who have higher grades on project reports will receive Excellent Practitioner certificate.

Technique Course Content

	Morning	Afternoon
Date 2	Global Geo-disaster problem and scenario	Introduce to Emergency response procedure
Date 3	Landslide and debris flow hazard mapping	Landslide and Debris flow numerical simulation
Date 4	Land use planning regulations and policy	Landslide field investigations
Date 7	Debris flow warning system	Landslide and Debris flow monitoring system
Date 8	Landslide mitigation methods and countermeasures	Hazard loss and Social Vulnerability for slope land problem

** Course content is subject to change without notification

6. Organization Committee

Head of committee:

Prof. Masaho Yoshida (National Institute of Technology, Fukui College, Japan)

Committee members:

Prof. Ko-Fei Liu (National Taiwan University, Taiwan)

Prof. Louis Ge (National Taiwan University, Taiwan)

Prof. Ranjan Kumar Dahal (Tribhuvan University, Nepal)

Prof. Tonglu Li (Changan University, China)

Prof. Wei Shan (Northeast Forestry University, China)

Contact of the committee:

Prof. Louis Ge (National Taiwan University, Taiwan)

7. Venue

The course will be held at GIS NTU Convention Center, which is located at the center of Taipei city.



8. Accommodation

8.1 For participants who receive full financial support, free boarding and lodging are provided in official hotels on a double room basis. Single occupancy or spouse occupancy will not be covered. The official hotels are

- **The Koos Hotel** (November 3rd ~ November 7th, November 10th ~ November 12th) .
- **Country Hotel** (the night of November 8th)
- **Taichung Hero House** (the nights of November 9th)

8.2 During the coursework in Taipei, alternative lodging can be arranged. Please contact us for details. We can provide assistance for accommodation booking; however, the cost is not covered by the host.

The Koos Hotel



Taichung Hero House



Country Hotel



9. Visa Information

We encourage you to contact your local or nearby Taiwan Embassy or Consulate as soon as possible to begin the application process. To find the Taiwan Embassy nearest to you, please check the following web.

- [R.O.C. Embassy and Missions Abroad](#)

Whoever needs help for visa application, please contact us as early as possible (**4 weeks before** departure is advised).

10. Travel and tour information

All participants arriving by international flights should take plane to either Taiwan Taoyuan International Airport (TPE) or Taipei Songshan International Airport (TSA). The host will arrange transportation from airport to the hotel for arrival and departure during the schedule date. The subway system, bus system and taxis are extremely convenient for foreign visitors. Travel cost is not included for the free time. A friendly free city tour assistant will be available upon request. If you plan to have prolonged stay in Taiwan, you are welcome to contact us for suggestions and further information.

- [Taiwan Travel Net](#)
- [Taipei Travel Net](#)
- [Taiwan High Speed Rail](#)
- [Taipei Metro](#)

11. Contact

1. Prof. Louis Ge

Organizing committee, Summer Training Course for Slope Land disaster Reduction

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Email: louisge@ntu.edu.tw

2. Mr. Min-Chien Chu,

Course Secretary, Training Course for Slope Land disaster Reduction

Ph.D. Student, Dept. of Civil Engineering, National Taiwan University

Email : stcsldr@gmail.com; d05521005@ntu.edu.tw

3. Mr. Cheng-Hsi Hsiao,

Course Secretary, Training Course for Slope Land disaster Reduction

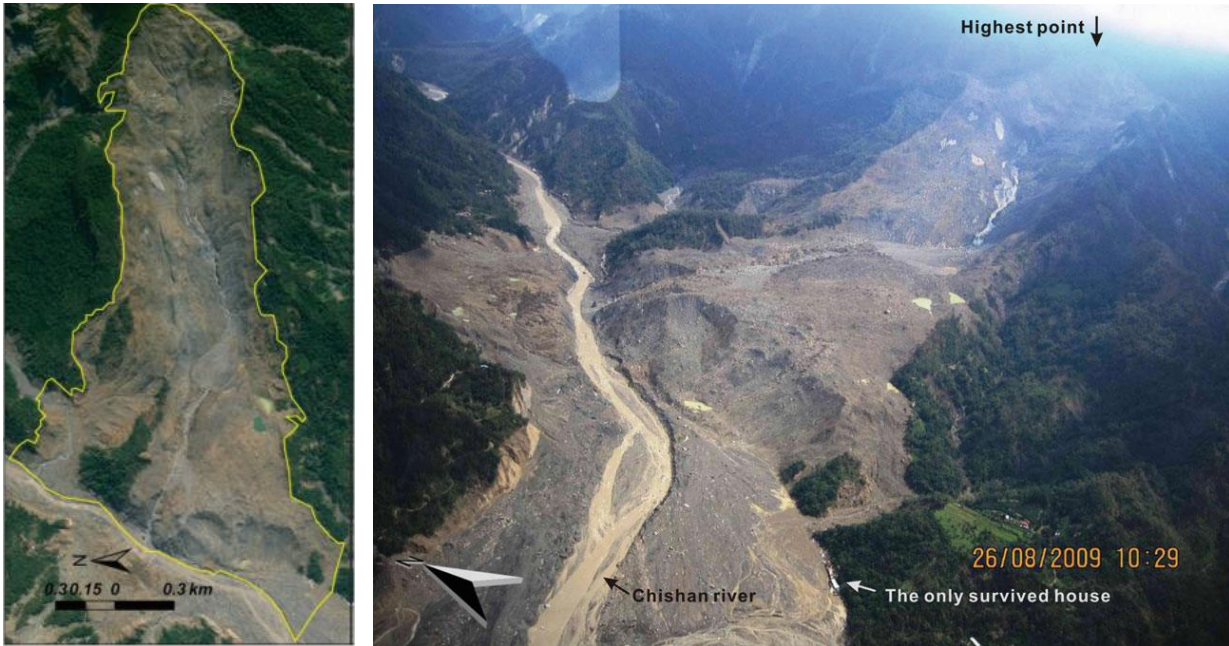
Research Assistant, Dept. of Civil Engineering, National Taiwan University

Email: stcsldr@gmail.com; r05521112@g.ntu.edu.tw

12. Introduction for Field Trip locations

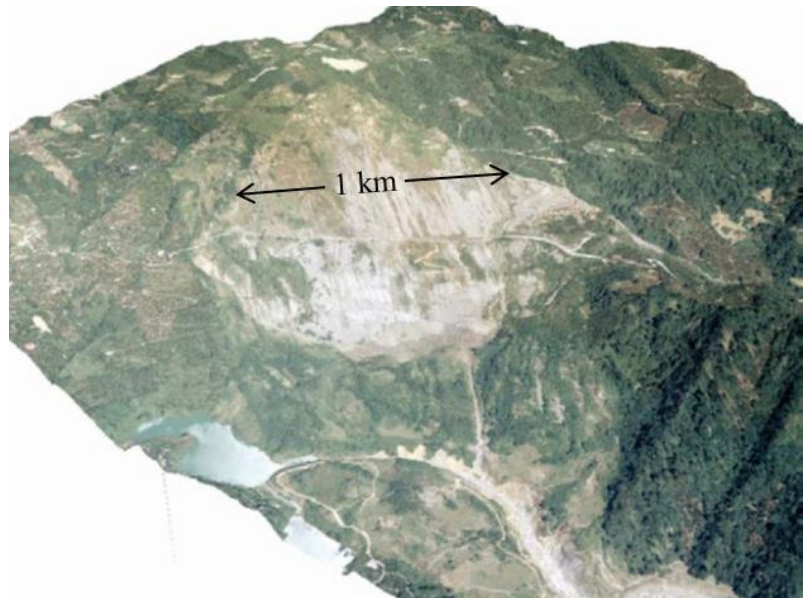
12.1 Xiaolin village

Xiaolin village is located in Kaohsiung County, Taiwan. During typhoon Morakot, a deep-seated, dip-slope landslide with an area of 2.5 km² and a volume of 2.7×10^7 m³ occurred and killed more than 400 people. It occurred at 6:17 a.m. on August 9, 2009 due to heavy rainfall. The mean depth of Xiaolin landslide was 44.6 m. The main sediment slid through an original valley, dammed the Chishan River, and buried a part of the Xiaolin village. Dam-breaking occurred shortly after and buried remaining part of the village. It was the most devastating disaster occurred since the typhoon warning system was established in Taiwan in 1992.



12.2 Chiu-fen-erh-shan Landslide and Disaster Memorial Park

The Chiu-fen-erh-shan landslide took place about 12 km to the north of the 921 earthquake epicenter. The total area of the landslide is more than 200 Hectare and the total volume slid down is roughly 30 million m³. The slide moved more than 2 Km and 20 household is destroyed. The slide is located in the Inner Western Foothill zone and affected middle to late Miocene sandstones with interbedded shale layers. The Chiu-fen-erh-shan landslide affected a 60 m thick and 1.5 km long flatiron remnant of shales and sandstones, dipping 20~22° toward a transverse valley. The avalanche began as a translational slide consisting of large blocks of rocks and soil that was rapidly



broken up to form a flow, as the material was pulverized in transit. Fluidization along the sliding surface created an excess pore pressure, which reduced the shear strength. The landslide deposit is located within a kilometric scale depression that was filled by the rock and soil avalanche. The average thickness of the deposit is between 60 - 80 m. It consists of a chaotic mixture of small rock fragments and jointed blocks.

The slide is one of the largest in Taiwan's record. Therefore, a Memorial park is established to preserve the entire original phenomenon. A comprehensive monitoring system is constructed here by Bureau of Water and Soil Conservation.

12.3 921 Earthquake Museum of Taiwan

At 01:47AM on September 21, 1999, the central part of Taiwan was struck by an earthquake that registered 7.3 on the Richter Scale. The resultant loss of life and damage to property put it among the worst natural disasters of the past century in Taiwan. In the wake of the 921 disaster, the local government decided to preserve some of the phenomena related to the earthquake such as slips in the fault line, collapsed school structures, raised river beds and other selected locations, to serve as reminders for the public of the need to prepare for such disasters and to be ready to provide emergency rescue services.

The 921 Earthquake Museum of Taiwan combines an Exhibitions Building with the geological changes and destroyed structures in one place to present a clear impression of the damage that was caused by the earthquake. The structures serve as pointers to the fault lines hidden under the earth and make the earthquake more real to visitors. Chelungpu Fault Gallery is located right next to the oval track that was sharply displaced during the earthquake, showing very distinctly how the fault line moved.

If you follow the structures along the line of the fault and study how the land is formed, you find both isolated and linked areas that represent different kinds of spaces to the observer.



12.4 Sun Moon Lake National Scenic Area (Optional)

The Sun Moon Lake National Scenic Area is praised for its five major recreational systems, including the lake, Shueili River, Puli, Jhuoshuei River and Jiji. The surrounding areas stretch to cover known tourist spots including Taumi, Checheng, Jiji, Shueisheda Mountain, Sangyong Falls, Mingtan Reservoir and Shueili River.

Divided by Lalu Island, the Sun Moon Lake scenic area got its name from the unique terrains that look like sun on one side and crescent moon on the other. Crowned as one of the Eight Wonders of Taiwan, Sun Moon Lake is also the most famous source of hydroelectric power; offering key tourist themes - “high mountain and lake”, “indigenous culture”, and ”nature ecology,” the Sun Moon Lake Scenic Area attracts more than six million visits each year.

Sun Moon Lake features the only full-range 3D tours (lake, sky and land) in Taiwan. The lake cycling trail has been dubbed by CNNGO, CNN as one of the most beautiful cycling trails in the world.

