REPORT

Asian Summer School 2014

Geoinformatics and Issues on Sustainable Development in Asia

CHUBU UNIVERSITY
AICHI JAPAN

ASIAN INSTITUTE OF TECHNOLOGY
1959

Sponsors Support:

Chubu University, Japan
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1. Summary

With the cooperation of the Chubu Institute of Advanced Studies, Chubu University, and Remote Sensing and GIS (RS&GIS) Field of Study, Asian Institute of Technology (AIT) organized the "Asian Summer School in Bangkok 2014" program from August 18th to August 29th, 2014 at AIT, Pathumthani, Thailand. The theme of the program was "Geoinformatics and Issues on Sustainable Development in Asia".

A total of 21 participants from 13 universities and organizations located in 11 different countries participated in this program. From Japan, six participants from Chubu University joined. Among of participants from Japan, there were four undergraduate students (Linguistics, English and English Culture, International relations and Comparative Culture) and two master students (Bioscience and Biotechnology). Moreover, there are one Taiwanese participants from Feng Chia University (Urban Planning and Spatial Information), one Indonesian lecturer from Halu Oleo University (Architecture), one Vietnamese undergraduate students from Ho Chi Minh City University of Science (Oceanology, Remote Sensing and GIS), one Laotian researcher from Department of Environmental Sciences, National University of Laos, one GIS staff from Myanmar Information Management Unit (MIMU), UNDP, one Cambodian undergraduate from Institute of Technology of Cambodia (general study), Ph.D Indian student from Indian Institute of Technology, Bombay (ICTs in spatio-temporal issues in natural resources informatics) and one Indian staff from Adani Ports and Special Economic Zone Limited (APSEZ). Additionally, there are four Thai participants, one undergraduate students from Silapakorn University (Environmental Science Department), two undergraduate students from Srinakharinwirot University (Geography) and one staff from SIAM MITSUI PTA Co., Ltd., (Environmental Engineer). Lastly, there were three participants from AIT which include one Nepali master student (RS&GIS), one Burmese master student from Energy and one Sri Lankan undergrad student from mechatronics.

Several lectures and field trips were conducted during the 12 days of this program. Thirteen lecturers and two hands-on from Chubu University with the different Field of Study in AIT (Remote Sensing & GIS, Computer Science and Information Management, Energy, Agricultural, and Water Engineering and Management) and two external lecturers from Feng Chia University and Feng Chia University were invited to provide the lectures on issues related on Geoinformatics and sustainable development in Asia. Moreover, nine visits and field trips were conducted to connect what participants learned from

lectures with the real world. Participants visited PASCO (Thailand) (Air Survey Company, Japan), National Disaster Warning Center (NDWC), Srinagarind Dam (hydroelectric power plants in Thailand), Safari Park Open Zoo & Camp, Space Krenovation Park (GISTDA), Grand Palace, Nitas Rattanakosin Exhibition Hall, Sunny Bangchak Learning Center (Solar farm) and Ayutthaya Historical Park. Furthermore, it is also to stimulate motivation of undergraduate students to endeavor start their own research.

English is used as the mean communication in lectures and daily life during the program. It made a deep impression of importance of globalization to the participants. However, in order to prepare participants ready for English lectures and communication during the program, English class which is organized by AIT language center was provided. During the program, we also requested participants to share their background, interest and expertise that crossed cultural and disciplinary boundaries. Participants made new friends from different countries as the international society. We received many positive comments that it is a wonderful time, which support the fact that Asian Summer School ended in large success.

Since 2009, Chubu University and AIT build a cooperative relationship, especially in the field of Geoinformatics and sustainable development. In September, 2011, Chubu University and AIT agreed on the Memorandum of Understanding about the academic cooperation. This Asian Summer School program falls within the scope of the Memorandum of Understanding between Asian Institute of Technology and Chubu University dated September 16, 2011. This program is also planned by Chubu University as a milestone towards Asia Campus project of MEXT, Japan, for which Chubu University, AIT, Pukyong National University and Fuzhou University in China are jointly applying.

In addition, we would like to thank each department and personnel of Chubu University, Division of Academic Affairs and RS&GIS FoS, AIT for the tremendous supports such as preparing a handbook, a detailed schedule of lecture and field trip, and any other logistics support. Also special thanks to Visionary Value Japan Inc., Japan, Adin Research Inc., Japan, Earth System Science Co., Ltd., Tjapan for their financial support to establish this program. We would like to thank to each organization and individual who participated and some of whom shoulder their own expenses.

2. Purpose

The participants will learn issues what related to sustainable development in Asia, GIS, and how does it contribute to issues. Then they will understand the present situation and problems of Asian countries prosperously developing, and the value of GIS as a tool. Also they will realize the rapid progress and problems accompanying the advance in Asia through field trip. All lectures will delivered in English. The participants will experience absorbing knowledge in English and understand its importance. This summer school will help participants to have international sense and awareness of the problem for the participants' thesis.

3. Participants

Universities and Organizations:

Chubu University

Asian Institute of Technology

Adani Ports & SEZ LIMITED

Indian Institute of Technology, Bombay

Institute of Technology of Cambodia

Myanmar Information Management Unit

Srinakharinwirot University

National University of Laos

SIAM MITSUI PTA Co., Ltd.,

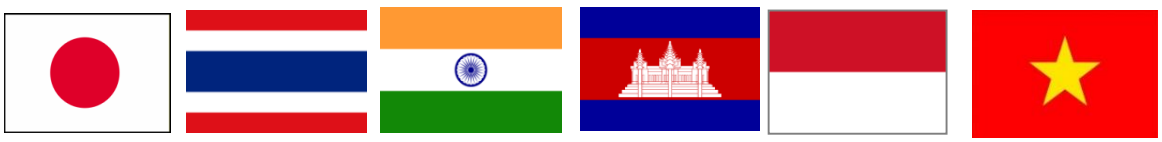
Silapakorn University

University of Haluoeo

Feng Chia University

Vietnam Academic of Science and Technology

Countries:



Chubu University

Hirofumi Abe
Undergraduate Student 3
English Language and Culture

Miyu Hoshino
Undergraduate Student 1
International Relations

Jessica Nakagawa
Undergraduate Student 2
Comparative Culture

Ryusei Kobayashi
Undergraduate Student 2
English Language and Culture

Mari Takazawa
Master Student 1
Bioscience and Biotechnology

Nami Umemoto
Master Student 1
Bioscience and Biotechnology

Srinakharinwirot University

Nuttawut Muenkaw
Undergraduate Student 3
Geography

Metinee Thoopradit
Undergraduate Student 4
Geography

Silapakorn University

Anthikar Marungruenag
Undergraduate Student 4
Environmental Science

SIAM MITSUI PTA Co., Ltd.,

Panita Prucpirojkul
Engineer
Environmental Engineering

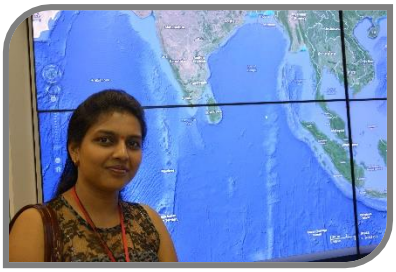
National University of Laos

Vilakhan Xayaphet
Researcher
Environmental Sciences

MIMU

Ma Mya Winn
GIS Assistant
Geography

Indian Institute of Technology, Bombay



Mrunalini Badnakhe
Ph.D. Student 1
ICTs in Spatio-temporal issues
in natural resources informatics

Adani Ports & SEZ LIMITED

Sujay Chokshi
Sr. GIS Analyst
Master Planning

Feng Chia University

Yi Ting Chen
Master Student 1
Urban Planning and
Spatial Information

Asian Institute of Technology

Kannathasan Rajaratnam
Undergraduate Student 4
Mechatronics

Thaw Thaw Phyu Htoon
Master Student 2
Energy

Shulaxan Sharma
Master Student 2
RS&GIS

Adani Ports & SEZ LIMITED

Chhunhong Kaing
Undergraduate Student 2
General Study

Adani Ports & SEZ LIMITED

Nguyen Duy Khang
Undergraduate Student 4
Oceanology, Meteorology and Hydrology

University of Halu Oleo

La Ode Abdul Syukur
Lecturer
Architecture

4. Lecture program

All lectures delivered by AIT and other staffs.

Date	Topic	Lecturer
18 Aug	English Communication	Language Center
19 Aug	Ubiquitous Geo-informatics	Prof. Kiyoshi Honda
	RS/GIS Activities in Myanmar Information Management Unit	Mr. Khun San Aung
	Geoinformatics and Applications	Dr. William Lin
	Interoperable Geoinformatics & Location Base Service	Dr. Sarawut Ninsawat
20 Aug	Global Navigation Satellite System (GNSS) receivers	Dr. Sarawut Ninsawat
	Mobile video processing platform for agricultural	Dr. Matthew N. Dailey
	Hand on : Geospatial Analysis using Free Open Sources Software (FOSS)	Dr. Sarawut Ninsawat
22 Aug	Food Security: Sustainable Agricultural Production	Dr. Peeyush Soni
	Energy: Renewable Energy Resource and Technologies	Prof. Sivanappan Kumar
	Climate change and Water Resource	Dr. Sangam Shrestha
25 Aug	Recent Topics in Space Technology	Dr. Shinichi Nakamura
	Geoinformatics for Disaster and Sentinel Asia	Dr. Masahiko Nagai
	Health GIS	Dr. Nitin Kumar Tripathi

5. Field trips program

The participants visited these places.

Date	Field Visiting
21 Aug	Line Mapping Section and Orthophoto Section (PASCO)
	National Disaster warning center (NWDC)
23 Aug	Srinagarind Dam (EGAT), Srisawad, Kanchanaburi: Hydroelectric Power Plants in Thailand
24 Aug	Safari Park Open Zoo & Camp, Bo Phloi, Kanchanaburi
26 Aug	Space Krenovation Park (SKP), GISTDA, Sriracha, Chonburi
	Hand on GNSS on the beach, Sriracha, Chonburi
27 Aug	Grand palace: Emerald Buddha
	Nitasrattanakosin Exhibition Hall
28 Aug	Sunny Bangchak Learning Center
	Ayutthaya Historical Park

6. Comments on lectures

All participants were requested to give the feedbacks lectures by submitting everyday homework. The table below presents the responsibility of participants for their mission.

	Name	19	20	21	22	23 -24	25	26	27	28	29
1	Hirofumi Abe	O	O	O	O	x	x	O	O	x	x
2	Miyu Hoshino	O	O	O	O	O	O	O	O	O	O
3	Ryusei Kobayashi	O	O	O	O	O	O	O	O	O	O
4	Jessica Nakagawa	O	O	O	O	O	O	O	O	O	x
5	Mari Takazawa	O	O	O	O	x	O	O	O	x	x
6	Nami Umemoto	O	O	O	O	O	O	O	O	O	O
7	Mrunalini Badnakhe	O	x	O	O	O	O	O	O	O	O
8	Nguyen Duy Khang	O	O	O	O	O	O	O	O	O	O
9	Panita Prucpirojkul	O	O	O	O	O	O	O	O	O	O
10	Sujay Chokshi	O	O	O	O	O	O	O	O	O	O
11	Anthikar Marungruenag	O	O	O	O	O	O	O	O	O	O
12	Shulaxan Sharma	O	O	O	O	O	O	O	O	x	O
13	Thaw Thaw Phyu Htoon	x	O	O	O	x	O	O	O	O	x
14	Chen Yi-Ting	O	O	O	O	O	O	O	O	O	O
15	Rajaratnam Kannathasan	x	x	x	x	x	x	x	x	x	x
16	Nuttawut Muenkaw	O	O	O	O	O	O	O	O	O	x
17	La Ode Abdul Syukur	x	x	x	x	x	x	x	x	x	x
18	Metinee Thooppradit	O	O	O	O	O	O	O	O	O	O
19	Chhunhong Kaing	O	O	O	O	O	O	O	O	O	O
20	Vilakhan Xayaphet	O	O	O	O	x	O	O	O	O	x
21	Ma Mya Winn	O	O	O	O	O	O	O	O	O	x

The meaning of each symbol is described below.

O means submitted
x means not submitted
- means not joined

Some of comments below present the contents of lectures that participants received from each lectures.

An Intensive English Course (Language Center)

As the purpose of Asian Summer School, Four days intensive English course was conducted during 12-15 August 2014 as an optional course, which provided the skills and tips for participants to understand academic lectures, presentation and debating. And the comments of some participant are shown as below:

- **Hirofumi Abe** (Undergraduate student 3, English Language and Culture)

I could learn some words that is the kind of technical in the class. Watching movies about some speech, introduction about technology and reading the scripts can help me knew more the related words, contents and what they would like to inform. Also it can help to improve my listening skills. So, I could understand Asian Summer School lectures easier. It was nice and meaningful. I have no idea to make it better, I think it was best way. And Mr. Matt was good teacher, I am sure.

- **Ryusei Kobayashi** (Undergraduate Student 2, English Language and Culture)

This class was good but the professor is very knowledge about linguistics and education in English. Focusing the content can help to understand the Asian Summer School classes. However, before doing English classes, maybe he needs more preparations because it`s very difficult.

- **Nami Umemoto** (Master Student 1, Bioscience and Biotechnology)

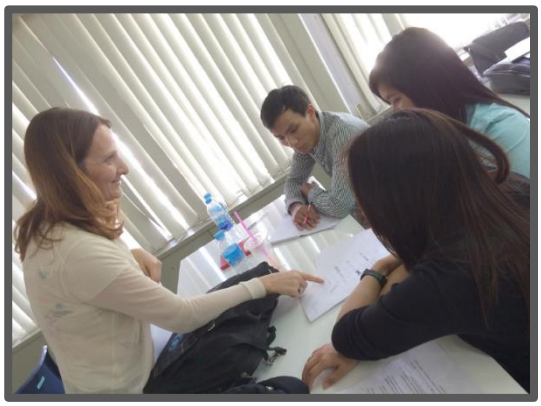
I cannot listening and speak English in my life. Therefore, it is a good chance to listen to English. And I have known many important words about Asia summer school lectures. I thought that can improve my English skills before participating. However, I need study more English and I got motivation from everyone. In this class, I studied various topics. Therefore, it helped me to understand the necessary words and topics. Moreover, it help me to understand more about Geoinformatic lectures.

English Communication (Language Center)

Learn how to introduce yourself, sharing the participant cultures and ideas, how to improve listening comprehension of lectures through targeted listening strategy instruction, catch the main point from presentations and group discussion about the topic "the most impressive technology, introducing the vocabularies on the issue of Geoinfomatics and Sustainable development.

- **Ryusei Kobayashi** (Undergraduate Student 2, English Language and Culture)

This class is dedicated about multicultural communication by using English. So, basically what I did were these. Firstly, we watched some movie while having about 7-hour classes and shared our reflective idea about those movies by talking with my group mate. On the way of learning doing that, we were able to share our culture. This is one of the good things that we were able to understand situation in their country as well. Secondly, we learned about little bit of linguistics. For an example like, how people who different culture talk differently. Very interesting thing is that language is really



deeply pertaining to their own culture. Thirdly, I got ideas about what makes interracial communication difficult. There are many factors around us making our communication difficult. However, one thing we have to keep in mind is even we use different language. The understanding of auditory surpasses the understanding of visual. so even if people who speak English very well, they would be separated in two types one side can may have hard time to communicate with people speaking English or not. So it indicates that not only the increasing the vocabularies like but also increasing experience. So the more experiences and failures we have, the better international people we can become. In conclusion, among cultures it is never easy to communicate one another however one thing for sure is to respect their culture is the most key to be a better English speaker.

- **Nami Umemoto (**Master Student 1, Bioscience and Biotechnology)

I think it was good that I could know a member's details. And the lecture is very interesting for me. Because I was able to know an example of how to use satellite. I think that the satellite helps to suppress the damage of the natural disaster.

Ubiquitous Geo-informatics (Prof. Kiyoshi Honda)

Learn about what is the Ubiquitous Geo-informatics? How are computers and sensors utilized with Geo-informatics for each utility? (such as agriculture , disasters and environment) satellite overview, learn about data assimilation, integration and application of Remote Sensing, field sensor, UAV and utilization, WEBGIS and geospatial data.

- **Nguyen Duy Khang** (Undergraduate Student 4, Oceanology, Meteorology and Hydrology)

1. The emergence of geo-informatics technologies changed our life. We need to change our thoughts to the idea of developing these technologies.
2. I can get more information about environment, water resources, land management, civil engineering by using geo-informatics technologies.
3. I can understand about exchange, store and update data in geographic information network.
4. I can get more information about the useful applications in monitoring ground.
5. I can get more information about satellites network system.
6. I can get more useful information about field sensor network and automatic monitoring system.
7. I can know useful applications about unmanned air vehicle image.
8. I can know about Web GIS and methods to bring the application of geographical information systems to the public through Web GIS.
9. I can get information about soil-Water-Atmosphere-Plant Model (SWAP), and applications of this model in monitoring of rice crop through using remote sensing.

- **Chen Yi Tang** (Master Student 1, Urban Planning and Spatial Information Engineering)

It is the first lecture's day. Prof. Honda gave a lecture about remote sensing and satellite, we can learn the basic theory about RS and satellite, application result with his team and UAV introduction. Moreover, knowing different of track with Polar Orbit and Geostationary satellite, the merit of Radar RS, introducing the International Charter providing a unified system of space data acquisition, web model and so on. We can realize that there are different kinds of application in different country, impact for my knowledge!

Online Skype Presentations:

RS/GIS Activities in Myanmar Information Management Unit (Khun San Aung, MIMU)

Learn about the purposes and responsibilities of MIMU, the application of RS/GIS/GPS at MIMU such as a spatial data repository, supporting for Humanitarian and disasters including mapping supports for other organization and planning for NSDI. How to apply RS/GIS for flood mapping system and earthquake. Additionally, the application of Web GIS for monitoring water level, mapping settlement (land use/ land cover) and detecting biodiversity.

- **Thaw Thaw Phyu Htoon Thaw** (Master Student 2, Energy)

I learned about basic web GIS to identify the location of area (e.g. google map). It's very useful tool for me because I use street view and map view for finding new places when I arrived to AIT, everything was new to me and I don't know where the shopping malls and restaurants. It helps me to find the way and also gives me directions and bus number. Google has also the services of multimedia mapping which shows the places where the picture was taken and historical mapping can help to see the location.

- **Nuttawut Muenkaw** (Undergraduate student 3, Geography)

Water management to prevent flooding. Or predict areas prone to flooding. And also for use in agriculture. Using GIS applications or remote sensing as an aid in forecasting. This information is stored to record the data. GIS and Web Cast For the public to study Web GIS information which was not only water management. It includes information on the traffic. The last of these data will be reported in real time so that we are always learning.

Geoinformatics and Applications (William Lin, GIS Research Center, Feng Chia University)

Learn about the introduction of Geoinformatics (GIS, GPS and Remote Sensing) and the applications of it such as land adaptability, route planning. Moreover, how to use spatial statistics for geographic phenomena and making decisions analysis. The application of using Geoinformatics for landslide monitoring and water resource management including Fleet Management System (FSM).

- **Anthikar Marungruenag** (Undergraduate Student 4, Environmental Science)

I have learned that the application of GIS and RS, such as google maps or even checking in on Facebook. I have learned about LBS, which is an information about the position, location and components of LBS including mobile device, communication network, GPS, and data providing.

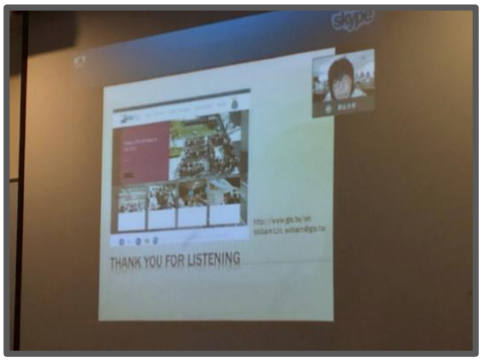
- **Ryusei Kobayashi** (Undergraduate Student 2, English Language and Culture)

It was really informative. He told me at the beginning that the number of cell phone that sold is relatively bigger than the number of babies given. So, it indicates that most of people will have cellphone. It would be more sustainable in near future. I hope the time when we just take a picture of building, we can know more information from that.

- **Chhunhong Kaing** (Undergraduate Student 2, General Study)

He was talking about how RS&GIS works. And I remembered that he was a civil engineer, yet he continued his further education about RS&GIS! It is very nice for me, it is alike!

- **Chen Yi Tang** (Master Student 1, Urban Planning and Spatial Information Engineering)



I'm excited that I can hear my teacher, William's sound in Thailand! I feel not lonely anymore, thanks for his online lecture for us. He introduced the theory of GIS and application on landslide, traffic, monitoring of cars, land use suitability analysis, we can know the different way to use on GIS! Although it almost is used for disaster, but they have different way to analyze. Dr. William also presented the web GIS in different way as well.

Interoperable Geoinformatics & Location Base Service (Dr. Sarawut Ninsawat)

Learn the integration of general IT and geospatial data, how to interoperate geoinformatics data to The Open Geospatial Consortium (OGC) web service, web GIS, software development efforts, online data archives and applications.

- **Jessica Nakagawa** (Undergraduate Student 2, Comparative Culture)

I learned that mapping nowadays become very easy because of these mapping (Ubiquitous GIS/Mobile GIS) and we can look for the place, the time you take to get there. In addition if we want to go in anywhere we can know because of this mapping that was created of Web services.

- **Miyu Hoshino** (Undergraduate Student 1, International Relations)

It was impressive to me that application of remote sensing. I had thought that almost stopping develop the technology of GPS. But I heard about application examples today and I was surprised. I thought there are many things to expect.

➢ **Ma Mya Winn** (GIS Assistant, MIMU)

I have learned about Web coverage services (Web Coverage Services will be include satellite images and digital elevation modal the data will be returned geo tiff), Web Feature Service that will be get with point line, polygon and will return with GML and Web Map Services for getting the information and images, we can use get capabilities request and get map request and get feature info.

Introduction of GPS (Dr. Sarawut Ninsawut and Mr. Sanit Arunpold)

Learn about the concept of GPS (GPS Segments and the component of GPS), How to get the coordinate by using GPS (Coordinate Calculation), error sources that affects the GPS, GPS applications (for navigating, mapping,/GIS and surveying) and GPS Measurement Techniques.

➢ **Nguyen Duy Khang** (Undergraduate Student 4, Oceanology, Meteorology and Hydrology)

I can know more about the GPS concept. - Before, identifying point of references were The Sun, Moon, stars and we did not know exactly our position. GPS is the Global positioning system, the component of the GPS consist of Space segment, control augment, user segment. Moreover, I know how we can determine the distance from satellite. We need measure time difference between same part of code from satellite signal and from ground receiver signal. And then, we will have delay time. We can determine us position. We can obtain position from 3 satellites. But we want obtain our position with high accuracy we need more and more satellites crossover together. So, to eliminate the error sources because of the orbit error, clock error, rover error, atmosphere error and the error total of sources can make accuracy go down. Additionally, I learned about GNSS that is the global navigation satellite systems and satellite visibility will go up if we can

connect multi-GNSS. I can get more information about GPS applications to use for consumer products (watch, smart phone,), sport, training, tourism, mapping for GIS, navigation service and public transport management. For GPS measurement techniques, I know the procedures of Post processing (determine rover station by base station and logging the data both base and rover in the same time) and Real-time kinematic (using for enhancing the precision of positioning data.)

- **Mrunalini Badnakhe** (Ph.D. Student 1, ICTs in Spatio-temporal issues in natural resources informatics)

The topic is new and ice breaking for me as I am working in Agro-informatics lab. The importance of image processing application in agriculture added much more values to my knowledge. As per this lecture I found the new ideas for the step for future research.

- **Ryusei Kobayashi** (Undergraduate Student 2, English Language and Culture)

I was able to know how satellite understand the size of object so it was really interesting. It was way difficult for me to understand how cameras capture the objects because of luck of my understanding in geometry. Totally, the lecture was really interesting but when it comes to numbers. It was beyond my description. But it does not mean that my interest to this field has stopped moreover I will pursue to understand what is this

Machine Vision in Agriculture (Dr. Matthew N. Dailey)

Learn about image processing in the context of Vision Systems. The useful of image processing in all phases of agriculture, image processing in pre-harvest applications, the chromatic restoration of an image, mobile robot in agriculture, 2D mapping with laser range finders, mobile video processing for agricultural crop mapping, Mapping with stereo vision and occupancy grids and a high-throughput system for automatic phenotype measurement.

- **Hirofumi Abe** (Undergraduate student 3, English Language and Culture)

Robots for agriculture. If I was a farmer and had to sell the crops, the customer wants know many details about the product. Then I need to count or estimate the crops amount, but how? Dr. Matthew told us the system for crop mapping. It can recognize what is crop or not. It's easy for us to recognize that but robot. So the challenge is let robots recognize the things what we want them to do that.

- **Vilakhan Xayaphet**

Firstly, He explained about image processing and 3D structures and the basic of 3D objects and taking pictures using camera. Using cameras, robots and sensors, the productivity of agriculture can be increased by monitoring there is certain diseases or not so that it also helps to control the quality. But, there are also problems with weather such as rain, sunlight direction, intensity since the cameras are outdoor. There are 7 noise free correspondences necessary to get relative 3D positions of the cameras. He explained about vacuum cleaner and mobile video processing for agricultural crap mapping to find fruit regions and perform 3D reconstruction of the point regions. Shift Descriptor can classify fruits and non-fruits and identify whether there is disease or not.

Hand on: Geospatial Analysis using Free Open Sources Software (Dr. Sarawut Ninsawat)

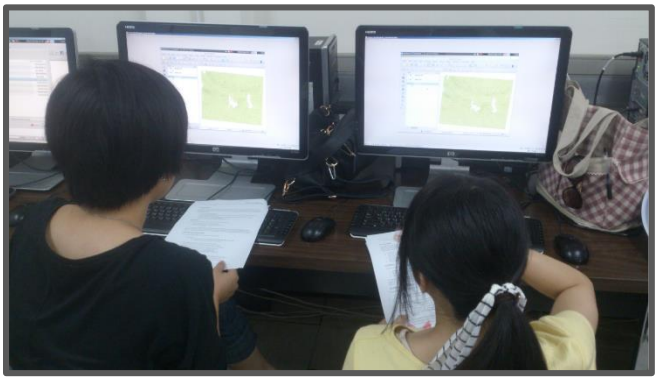
Learn about how to free open source software (FOSS) for analyzing the Geo-spatial data. In this case, QGIS is the FOSS that used for analyzing the land suitability. The participants learned how to use the tools that GIS provided for vector analysis such as Query tool, Buffer tool, Intersect tool and the step of analyzing data by working on the case study: finding the suitable area for being the farm.

- **Thaw Thaw Phyu Htoon** (Master Student 2, Energy)

We have learned how to choose the best land which meet our requirements using software (OGIS analysis). We were trying to find the land in Swellendam Town which distance is not more than 500 meters from the road and also within reasonable distance from a school and also the area of the land should be 100 and 150 ha. Then we were going step by step instruction. First choosing the town, the

land size (area) and the distance from the road and also from the school. If we go and check ourselves without using software (OGIS) it will take a lot of time and money for travelling. We have learned that we can solve the problem within an hour or minutes using the software. SO, it is very useful tool to do such a find land and I like the software even I am not familiar with it. I am very sure that it is very useful tool for today society.

- **Mari Takazawa** (Master Student 1,Bioscience and Biotechnology)



Today, I used "QGIS" at first time. At first, I couldn't understand how to use but many people tough me all. I knew when I want to setup, to write commands by myself.

- **Chhunhong Kaing** (Undergraduate Student 2, General Study)

I have done a great job on app on GIS. But it's very complicated and I still cannot get the core of this lecture. However, I still enjoy this lecture because it's very great.

- **Jessika Nagakawa** (Undergraduate Student 2, Comparative Culture)

I learned how to use QGIS and actually I could familiarize with GUI QGIS and to perform simple vector analysis in QGIS by using following the book. Also, I could know how useful of the QGIS program. Thank you.

<u>Agriculture Evolution and Agricultural Technology (Dr. Peeyush Soni)</u>

Learn about the water usage in different aspects, trend of Agriculture during 1960 – 2000, the food consumption and the agricultural land between the developing countries and consumer countries, the comparison between population growth (it means the increasing of food demands) and agriculture production (GDP and the other index parameters) and the sustainable agriculture that affects the food security in the world.

- **Metinee Thooppradit** (Undergraduate Student 4, Geography)

Agriculture was started by a man known to find food by hunting. Later in the agricultural revolution and was known to spread out. They have to address the agricultural industry to provide enough food to humans today. So the introduction of new technology into the era of modern agriculture technology and tech sessions. Most of the farm is located in the temperate zone. Future agricultural production will be sufficient to meet demand. And agricultural areas in Asia, with about 1 - 1.3 ha.

- **Hirofumi Abe** (Undergraduate student 3, English Language and Culture)

Today, agriculture population decrease, but consumption number increase. So it is big problem. If all people have only vegetables and don't waste the food and share equally, 10 million people can have a meals healthy. Now, foods we have are changing in the world.

- **Anthikar Marungruenag** (Undergraduate Student 4, Environmental Science)

In this class, I received the knowledge about the changing of our world is changing. The crisis is expending because population have increased and human need more and more consumptions, such as food, natural resources, etc. I think if human consume the natural resources more but they have not changed anything. The resources can be empty in the future. Organization should take a priority to agricultural development.

- **Nuttawut Muenkaw** (Undergraduate student 3, Geography)

To consume agriculture from the past until now, there is a tendency to consume higher due to increasing of population size that is likely the production decreasing. Due to lower farm workers (changing the work to other occupations), it might affect the higher cost of food production.

Renewable energy: To address climate change and sustainable development

(Prof. Sivanappan Kumar)

Learn about the overall resource uses, energy and sustainable development in social, economic and environmental, energy system, the trend of energy in the world (production and consumption), the energy for achieving sustainable development, the renewable energy options in the future options and the case study of utilizing renewable energy.

- **Jessica Nagakawa** (Undergraduate Student 2, Comparative Culture)

In this lecture I could notice that nowadays people use a lot of energy and is increasing day by day. Each person on the planet uses on average over 8 tons of natural resources per year or 22 kg per day. In addition, when we eat, our bodies transform the energy stored in the food into energy to do work. Finally I learned that there are 3 pillars of sustainable development Social, Economic and Environmental.

- **Ma Mya Winn** (GIS Assistant, MIMU)

I have learned about Energy source, energy carrier and End use equipment. In energy source, oil, gas, coal, biomass, nuclear and renewable are included as a primary energy. In energy carrier, Liquids, industrial manufacturing and power generation will be effective. In End use equipment, Mobility, Consumer choices and building should be included. Sustainable Development that meets the needs of the present without compromising the ability of future generation to meet their own needs. Finally, Sustainable development is very important because people live longer and population is increasing continuously. Resources for well- being are getting scarcer and climate changes will be one of the factors.

Climate change and Water Resource (Dr. Sangam Shrestha)

Learn about what is the climate change in global? The impact of climate change in environment and the adaptation of human for climate change such as the physical construction to avoid or reduce the impacts of climate change including policy for legislation, knowledge development and public norms for reduce risk and related impacts.

- **Chhunhong Kaing** (Undergraduate student 2, General Study)

The global concerning, global climate change! Sound incredible but it has been occurring! This lecture was focused on this and water resources management. I gained more knowledge about the climate

change and some negative and positive of this. One more about the water resources management, how to get and use properly the water in many types. This topic was interesting to me.

- **Mrunalini Badnakhe** (Ph.D. Student 1, ICTs in Spatio-temporal issues in natural resources informatics)

I learned about the climate change. The effect of climate change in the world. The adapting conditions with the different examples.

- **Chen Yi Tang** (Master Student 1, Urban Planning and Spatial Information Engineering)

We can know the different meaning between climate and weather, as follow the continuing increase will be the climate change, like the world temperature. If temperature keep increasing, it will bring raising sea level in somehow, snow are melting, and enhance the rate to happen flood, even make a country drown. And how we can adapt the climate change.

Recent Topics in Space Technology: Space Debris Issue (Dr. Shinichi Nakamura)

Learned about space technology in Japan, the history of space development, the meaning of space debris and the increasing of objects in the space that leads the growth of number of space debris (increasing by breakup, collision, and unbundling). Additionally, how to treat satellite at end of operation.

- **Chhunhong Kaing** (Undergraduate Student 2, General Study)

I was surprised by his mathematic equation. It challenged my brain and remind me my mathematic knowledge. Not only this, he had told about the negatives in space development. Space debris and the satellite orbits, they are related to my interest. The collision of those space debris cause tremendous effects to satellite and our environment as well. So space development can be a part to cause the terrible thing for the planet.

- **Ma Mya Winn** (GIS Assistant, MIMU)

A satellite in orbit around the Earth does not fall into the Earth because the force of Gravity between the satellite and Earth is exactly balanced by the centripetal reaction force of the satellite constantly changing direction.

Space debris hits window of space shuttle in 1983. About 0.4 mm depth of hole on the window of spacecraft were damaged by the small pieces of satellite debris.
Debris orbiting Earth pose great risk to the operating satellites and other space objects, and the continuous increase in debris population increases the probability of a collision. The devastation that space debris may cause isn't too far from the depiction although real life is a tad less dramatic.
The key assets in Collision Avoidance are:

a. The telescopes, radars and satellites help in detecting, classifying and estimating orbital parameters of space debris

b. Computers in Joint Space Operations Center cranking through the large volumes of data obtained by the surveillance network and identifying dangerous stuff up there

c. Computers, qualified personnel and procedures at Mission Control Center

- **Nami umemoto** (Master Student 1, Bioscience and Biotechnology)

I was surprised that there was many debris and flying object of 94% in space is Space Debris too. Even small debris has big kinetic energy in orbit. I understand that Space Debris is very danger.

Geo - informatics for Disaster, and Sentinel Asia (Dr. Masahiko Nagai)

Know about RS and collaboration of JAXA, ALOS data applications, utilization of earth observation satellite (EOS) data, concept of Sentinel Asia and international agreement among space agencies.

- **Thaw Thaw Phyu Htoon Thaw**
  (Master Student 2, Energy)

He explained about applications for GIS. ALOS (advanced land observation satellite) JAXA analysis ALOS scan-SAR data of Pakistan Flood from June to August 2010 and provided this data to the

Pakistan government. Also monitored earthquake in Haiti January 13, 2010, forest monitoring at the West Rondonia during 11 years. The disaster occurrence in Asia is 40% and damage is 90% that means Asia does not prepare well for natural disaster. And he explained about flood in Thailand in 2011 and Ubiquitous sensor network to monitor volcano so that the people do not need to go the hazard area to get the data. Moreover, mobile phone are used as human sensors. More and more people are using mobile phone and that can be used as data collection machines so that if natural disasters are happen government can reach to help the people for example preparing of crews for saving and helping of people. Therefore, it is important to have the actual data of how many people are there in a particular area. Also, it can be used in train stations in order to detect the abnormal people by movements and movement of taxis can detect bad roads, raining or not by sensing the wiper of the taxis.

- **Mrunalini Badnakhe** (Ph.D. Student 1, ICTs in Spatio-temporal issues in natural resources informatics)

I learned about JAXA activities, simulation systems, difference mapping technology and real time monitoring systems and location based system like tracking system.

- **Shulaxan Sharma** (Master Student 2, RS&GIS)

I learned more about mapping required during the disaster management. Some data can be directly used from the internet which are near real time ex. Global Rainfall Map. Moreover, uing of GNSS for disaster management and the concept of Sentinel Asia. I have knew that 39% of the disaster occurs only in Asia in which 49% damage are there with 53% killed and 88% affected and organization providing data in emergency observations for sentinel Asia constellation. Additionally, I gained more knowledge about the application of UAV and sensors for disaster.

Health GIS (Dr.Nitin K. Triphati)

Learn about Geomedicine by using GIS as the tools for decision making and planning. How to apply geography to link the human health and social well-being for managing environmental inventories and exposure the phenomena. Additionally, the application of GIS for health in many case studies such as the exploring climatic factors contributing to malaria prevalence in Kanchanaburi, Thailand, the impact of climatic variability on diarrhea incidences in Chiang Mai, Thailand and the monitoring of distribution of diseases.

- **Chhunhong Kaing** (Undergraduate Student 2, General Study)

He told us about the GIS uses to observe the diseases occurred in any area and also the factors affect to our health. In addition, he also showed the health map, easy for controlling and solving the problems in time. He also mentioned about the geo and telemedicine for nowadays society. He provided the data of Dengue Fever, Dengue Hemorrhagic Fever and Malaria by Line graph and table. Even it was a bit complicated but I still thought that it was very fantastic.

- **Thaw Thaw Phyu Htoon** (Master Student 2, Energy)

He explained about health management using GIS that is a person's health data can be collect and save in the server since he or she is born so that it is easy to medical checkup when something happen (blood group, weight, blood pressure, heart rate) can be measured and can be easily read on computer screen by different doctors and can avoid to ask the same questions to the patients. And GIS also help the old people and the people who has heart problems can monitor from hospital by using sensors and can help them. Nowadays, the doctor from one country can ask suggestions for some decisions from the doctor from another country so that it can save money for travelling.

- **Ryusei Kobayashi** (Undergraduate Student 2, English Language and Culture)

Most people want to be health and want to go to good hospital but some people cannot do that easily. GIS technique can be used for people who do not have access to good hospital because if they have internet access it means they can be checked by good doctor. I hope this tech will be developed

- **Mari Takazawa** (Master Student 1,Bioscience and Biotechnology)

My major is analytical chemistry in environment. So I had thought my study is far from human health. But today’s lectures changed me. The air and water contamination have related for human health I think. So I was surprised that is relating animal, culture and distance.

7. Comments of field trips

PASCO

PASCO company corporations and company's activities, capabilities of remote sensing and production line. Observe line mapping, orthophoto and 3D map process sections.

- **Ryusei Kobayashi** (Undergraduate Student 2, English Language and Culture)

PASCO is actually Japanese company running in some countries. The company in Thailand usually gets some jobs from Japan and they will do the job but the most interesting thing is the maps what I usually see are not possibly made by Japanese. Before I went there, I thought all the map is made by Japanese people. I really appreciate that. Actually what I observe is that this job is require to know knowledge about computer literacy, Geographic filed. These technology is combined. It means that education in Thailand is pretty much high. And I was also able to know the idea that Thailand has high potentiality because education is one of the indicators that what is situation in Thailand. For that reason, it was really great know that people in Thailand.

- **Metinee Thooppradit** (Undergraduate Student 4, Geography)

As a company with many branches, including Thailand, their work is mainly related to adjustments to ortho photo. And projects that have been coming from Japan. Including photogrammetric (mms) to be used in mobile, witch will the only program in the rescue work. And in other ways, which I'll get to Spokane as objects.

- **Nami Umemoto** (Master Student 1,Bioscience and Biotechnology)

I had known PASCO Co. But I knew that it was a company of Tokyo Japan for the first time. I was interesting to see mobile mapping system. And I was surprised that there was a Japanese plenty. I think that I want to use Arc GIS. And I want to study CAD.

- **Mrunalini Badnakhe** (Ph.D. Student 1, ICTs in Spatio-temporal issues in natural resources informatics)

I learned about the company's product and services, the network of company in the world, their work culture. They are using high technology software and equipment. The 3D plotting data set for 3D visualization and analysis.

National Disaster Warning Center (NDWC)

Learn about Thailand early warning system, risk map, supporting section, database modeling and international corporations. And we have chance to interact with staffs and visit operation rooms.

- **Ma Mya Winn** (GIS Assistant, MIMU)

NDWC have many preparedness for natural disaster like Sound Alert system, broadcasting system, SMS sending system, Sending message from HQ to respective Disaster warning &watching tower etc. The new technology for me is they are setting buoy into the sea and ocean to measure weather parameters such as air temperature, barometric pressure, wind speed and direction and to report these data via satellite radio links such as the purpose-built Argos System or commercial satellite phone networks to meteorological centers for use in forecasting and climate study. May be anchored (moored buoys) or allowed to drift (drifting buoys) in the open ocean currents. Position is calculated by the satellite.

- **Nuttawut Muenkaw** (Undergraduate student 3, Geography)

Study of disaster management system caused by nature. And learn to take refuge from natural disasters, which will prevent the loss more includes listening to alarm when the disaster.The equipment on the survey and monitoring of disaster. Watch live out the room calling station tomato wine when the disaster.

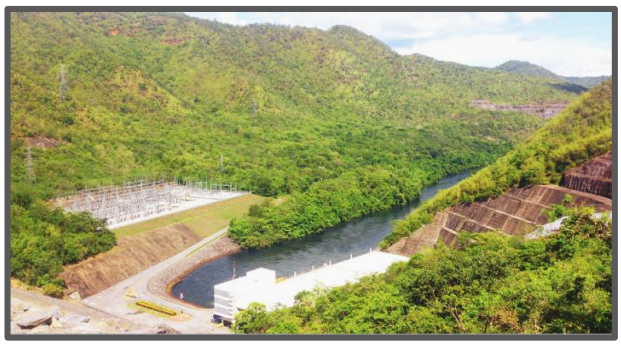
- **Hirofumi Abe** (Undergraduate student 3, English Language and Culture)

NDWC works for people all over the world to protect us from disasters. It tells us disasters information through the SMS, Fax, TV or some media. NDWC prepares for tsunami, NDWC puts Buoy on the ocean every 2 years. It has sensors and when earthquake occur, it sends the information to NDWC through satellites. And we could get the information that coming tsunami and how much it is. We need the information because if we don't know tsunami is coming, we might be panic and we mightn't do nothing. We need any disaster's information for our preparation.

- **Sujay Chokshi** (Sr. GIS Analyst, Master Planning)

Discuss on the types of disaster, geological, hydrological, meteorological, forest fire including the overall work of NDWC and also the demo. Discussing on GTS (Global Telecommunication System), GIN (Government Information Network), WEC (Web Emergency Center) and giving the demo on DDSS (Disaster Decision Support System).

Srinagarind Dam (EGAT), Srisawad, Kanchanaburi: Hydroelectric Power Plants in Thailand



Experienced in one of dam in Thailand, where is an embankment dam on the River Kwai in Si Sawat, Kanchanaburi, Thailand. The main purpose are river regulation and hydroelectric power generation. Construction on the dam began in 1974 and it was complete in 1980.

- **Chen Yi-Tang** (Master Student 1, Urban Planning and Spatial Information Engineering)

There is a different part with the other dams, like floating solar farm, its detective function is really interested me, because it can chase sun when sun change track, it's really making me curiosity on it and we can see the drainage in closely distance, knowing how's the function for hydro-power.

- **Ryusei Kobayashi** (Undergraduate Student 2, English Language and Culture)

We have the legs to go right direction that is friendly to people and the globe or the legs to walk forward to abolish people and ruin the nature on the globe. What I want to say is the problem of using new clear

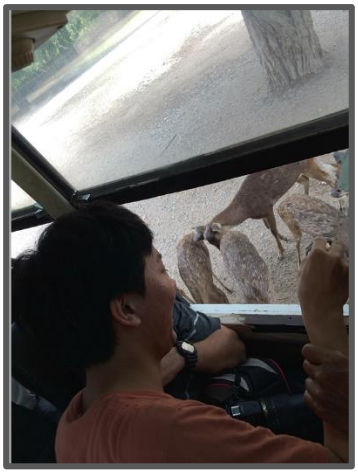
for generating energy is nowadays the well-known problem all over world especially in Japan. What we have to do is that we should find the effective energy that we can use instead of using the power of new clear. Actually without the power of new clear, we have some obstacles. What I observe is that I saw the infinite potential of renewable energy "water power generation" To overcome the obstacles, I hope we make progress on it.

- **Shulaxan Sharma** (Master Student 2, RS&GIS)

The Srinagarind Dam is an embankment dam on the Khwae Yai river in Si Sawat District of Kanchanaburi Province, Thailand. The main purpose of the dam is river regulation and hydroelectric power generation. The dam's power station has a 720 MW capacity of which 360 MW is pumped storage. The Srinagarind Dam is a 140 m (459 ft) tall and 610 m (2,001 ft) long embankment dam. It withholds a reservoir of 7,470,000,000 m3 (6,056,028 acre·ft). The dam's power station has an installed capacity of 720 MW and contains three 120 MW Francis turbines and two 180 MW Francis pump-turbines. The pump-turbines serve the dam's pumped-storage capability and generate electricity during peak hours. In off-peak hours, the pump turbines return water from the lower reservoir back into the upper reservoir. It also helps to maintain the ecosystem of the surrounding areas. Moreover, the extra water is sometimes used for the irrigation to the nearby locations.

SAFARI PARK OPEN ZOO & CAMP, Bo Phloi, Kanchanaburi

Experienced in a nature theme park, a tourism attraction, and seeing a wide variety of animals such as tigers, lions, bears, elephants, deer, zebras, llamas, flamingos, giraffes etc.



- **Chhunhong Hong** (Undergraduate Student 2 , General Study)

I wondered whether if it would be fun or not. The first seen was a very huge tiger lied on a bed, it seemed so lazy. My feeling backed and refreshed. We started our trip into an adventurous jungle. I saw deer, tigers, bears, lions, giraffes and zebras, they were too closed to me and I could feel them. Giraffes put their heads into the bus and I fed them. They were so adorable with the gentleness. The trip was ended by this,

and continued to visit the crocodiles and elephants' shows. It was admirable but I don't like crocodiles' shown! Finally, open zoo trip ended with the mixture of happiness, tiredness, pleasure and unforgettable memories. Hope to visit there again.

- **Chen Yi-Tang** (Master Student 1, Urban Planning and Spatial Information Engineering))

This is a very special experience that we can closely touch animals, feeding the food, observing their actions, especially for giraffes, they almost get into van and find food, that's my first time to touch giraffes' head, poor zebra their food already were eaten by giraffes, really nice experience for this open zoo

Space Krenovation Park (SKP), GISTDA

Visiting the New Geo-Informatics and Space Krenovation Park at the Thaichote Satellite Control Station in Chon Buri province, GISTDA role on space technology in Thailand, implement projects and future works.

- **Hirofumi Abe** (Undergraduate student 3, English Language and Culture)

The satellites SKP has connect to SKP just 4 times in a day so SKP should estimate it in 8 ours' orbit and send commands in the times. The satellites has two cameras and the each camera has different function.One has a two Spector camera .The other has a color camera. The two images makes more clearly and colorful images of the land.

- **Thaw Thaw Phyu Htoon** (Master Student 2, Energy)

When we arrived there, they showed the video which reflect the history of industrial revolution and GPS and satellite. And then, they explained about the satellite that send to the space orbit and that satellite can contact 4 times per day with ground station; 2 times a day and 2 times at night. That satellite helps to forecast weather and send images to the earth. For power supply, solar PV panels are

installed on the satellite which harvest solar radiation from the sun and generate electricity and some of electricity are stored in the batteries and use it at night time. Solar PV panels are fixed and only satellite can be adjustable from the earth station. The barrier for the technology is the life time of the batteries which is only about 5 years and now already over. But they hope that it can work more months. Then we got a chance to see the actual size of the satellite (the model), we have seen the lens, the solar panels which are very interesting. We have a lot of knowledge from the visit.

Hand on GNSS on the beach, Sriracha, Chon Buri

Learning how to use GPS/GNSS in real life through the seeking game. The participants learned to use GPS by finding out the caps of water bottle of which latitude and longitude are marked and saved in the device which has the compass and also can record the data. Then, using the devices such as base station which is connected to the satellite and the GPS is connected to the base station, find out the caps using GPS according to the compass and the Navigation system.

- **Chhunhong Kaing** (Undergraduate Student 2, General Study)

This was the first time for me to be in such that game. Not only fun, but I can gain the knowledge related to RS&GIS, benefits for my future education. I can understand how to find the position of objects hidden at somewhere when we knew the coordinates of those objects using GIS equipment. This has improved my knowledge in GIS, incredibly.

- **Chen Yi Tang** (Master Student 1, Urban Planning and Spatial Information Engineering)

Basically we can learn how a use GPS to find specific things, but need to set position beforehand, and how to control the GPS moving. Although the team more behind get more highest score, I saw a good

leader will get team members' support and believe to achieve the target, it need to be more steady for me, thanks for it can be practice.

- **Nguyen Duy Khang** (Undergraduate Student 4, Oceanology, Meteorology and Hydrology)

I have learned that Global navigation satellite system very important and accuracy: small errors (mm. or few cm) and the applications of Global navigation satellite system in many areas of our lives. Moreover, I learned about teamwork skills and increasing friendship of all participant in the course.

- **Ma Mya Winn** (GIS Assistant, MIMU)

This is the first experience in GNSS. I have learned a lot of things from this machine. It can support exact locations for the objects of the earth. It is using multiple satellites for its navigation system. And also I have got a team spirit from this hand on exercise. I also have more confident regarding point collection because our group can mark 5 points within 5 .21 minutes out of the time giving ten minutes.

<u>Grand palace: Emerald Buddha</u>

Sightseeing grand palace where made up of numerous buildings, halls, pavilions set around open lawns, gardens and courtyards. High lights are the temple of the Emerald Buddha and queen Sirikit textiles museum.

- **Mrunalini Badnakhe** (Ph.D. Student 1, ICTs in Spatio-temporal issues in natural resources informatics)

The main attraction point is the royal monastery of the emerald Buddha which is a sign of peace. The combination different cultures are found and explained in the palace. The sculptures, weapons at

ancient time, fine arts are still also maintained properly. One thing I learned about the accuracy and clarity in work maintained by the ancient people are may be more than current era.

- **Nuttawut Muenkaw** (Undergraduate student 3, Geography)

A Thai man was proud and glad that there is a very beautiful temple. Make the international appreciation of the beautiful temple and also know the history of the Grand Palace.

Nitusrattanakosin Exhibition Hall

Experienced on the advanced technologies - such as presentation devices, models, four-dimensional multi-media technique, multi-touch and multi-media animation technologies- are used in presenting the exhibitions about Rattanakosin City through interactive self-learning devices. The content is divided into nine topics in nine halls. It invites the public to learn, appreciate and take pride in Thailand's artistic and cultural legacies of the Rattanakosin Era.

- **Sujay Chokshi** (Sr. GIS Analyst, Master Planning)

One of the great experience to visit this place where is the one of the good governance for the public awareness where people can know the culture of the country. A story of the Thai culture was particularly interesting. The Thai culture felt that there were many things more brilliant than Japan.

- **Thaw Thaw Phyu Htoon Thaw** (Master Student 2, Energy)

Rattanakosin is the former name of Thailand capital city in 1792 and then it was changed to Bangkok to the present time. Firstly, we all walk through 12 old communities of Rattanakosin in one place to see the lifestyle and history. The King Rama I, founded the city by planning in similar ways of Ayutthaya era apart from material construction of the city, the King also raised the morale of people and raise Buddhism arts and culture so that Siam retained its unity and stability. We saw them in 4 dimensional area with wonderful images sound and even the water spray when necessary and the movie room was

lifted to another level of the building. It was amazing creation and technology they used are very good to understand all in a short period of time. And then, we had a chance to see the Emerald Buddha in all 3 seasonal attires in one visit and we pass through the specific area only for court ladies and we saw arts of noble ladies. And we have learned about the entertainments of Thailand with various arts since ancient time with Shadow Play, Masked Performance, Thai classical plays, dances and puppet shows. We saw them in 360 degree view sitting all friends in circular shapes and it had a lot of fun and knowledge. Finally we got a chance to see the architectures of Thailand such as in Palace, temples and houses in Rattanakosin and the changes in each era and the lifestyle have been developed with technological advances. We get a lot of knowledge of Thailand history today by seeing real things and models.

- **Vilakhan Xayaphet** (Researcher, Environmental Sciences)

I have got a lot of knowledge from this exhibition such as modernize performances, abilities of developing and improving tourism interests, using advantages technologies and recreation places for the visitors.

Sunny Bangchak Learning Center

Observing the big big project from Bangckak Petroleum, and studying on producing clean energy from solar cell. This project use Solar Cell more than 150000 pieces which it can produce and distribute the Electric energy for Electricity Generating Authority of Thailand. Moreover, it also reduce to import energy from other countries.

- **Ryusei Kobayashi** (Undergraduate Student 2, English Language and Culture)

First time, I saw directly the solar farm. Besides this, I had obtained a lot of knowledge as well. I knew the spots of the maximum solar radiation in Thailand, and that solar energy can reduce the carbon

dioxide in the environment. Moreover, the next generation, Micro LG will be the one to abstract the oil while we are using palm oil to abstract nowadays. One more silly knowledge is I know how to store solar energy. Study municipal waste water treatment process, there is the limitation about land use because the plant is set in urban area. They consume more electricity than other plants for pumping process. Biogas and solar cell should be applied to reduce an electricity cost.

- **Metinee Thooppradit** (Undergraduate Student 4, Geography)

Knowledge regarding the operation of solar cells that can be used in industrial and environmental friendly and there is algae that can be used to extract the oil, which is bordered by the energy of interest. How to make going through the various steps to be oil, but other parts of the algae, it can also be used to their benefit, as well.

<u>Historical world heritage capital (Ayutthaya)</u>

Experienced in cultural and historical heartland of Thailand's former capital city "Ayutthaya". And observed rural house's architecture and floating market.

- **Sujay Chokshi** (Sr. GIS Analyst, Master Planning)

It was really good place where we can know the culture of Buddhism. The place is well maintained for the tourist place

- **Nami Umemoto** (Master Student 1, Bioscience and Biotechnology)

A Buddha does not has a head. I was surprised it. I was surprised that a pagoda inclined, it seemed to be fail down. It was interesting.

- **Ryusei Kobayashi** (Undergraduate Student 2, English Language and Culture)

That place is amazing. That one was the most interesting historical cite. Probably If I have a chance to come here I would visit that site again.

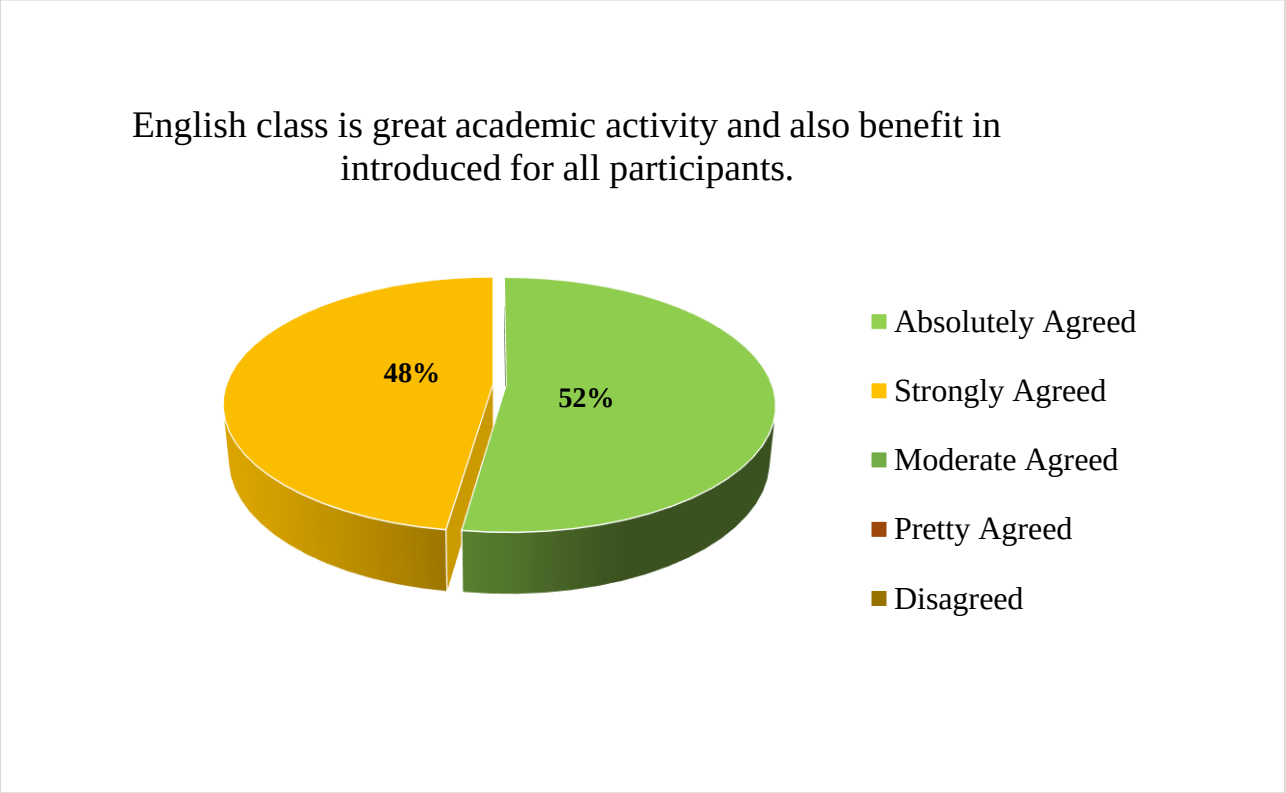
- **Chhunhong Kaing** (Undergraduate Student 2, General Study)

Strange feeling when I got there. The old temples with the Buddha statues looked so sad, and I had learnt some histories about Ayutthaya there with some photos of those.

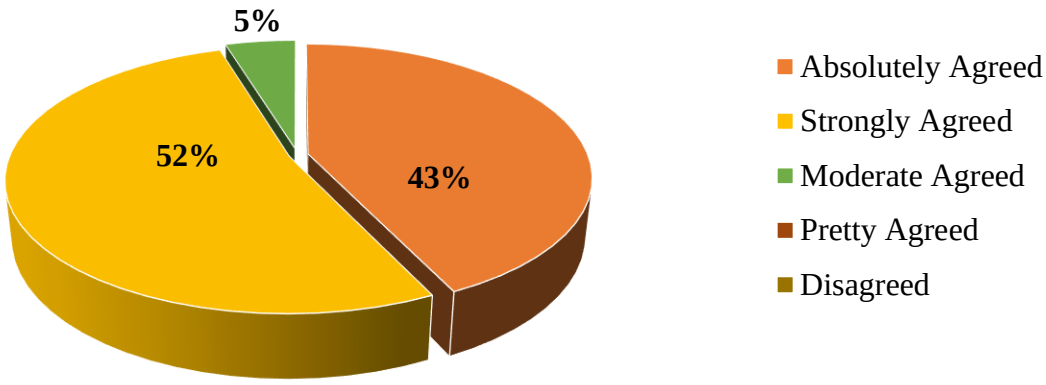
8. Program evaluation

In this program, the evaluation forms were prepared for receiving the feedbacks from participants in order to evaluate the weakness points and improve them in the next time. The contents of program evaluation form are divided into two parts. The first part is the question about overall satisfaction and the second past is the recommendation from participants. In this evaluation, there are 22 respondents from 24 participants.

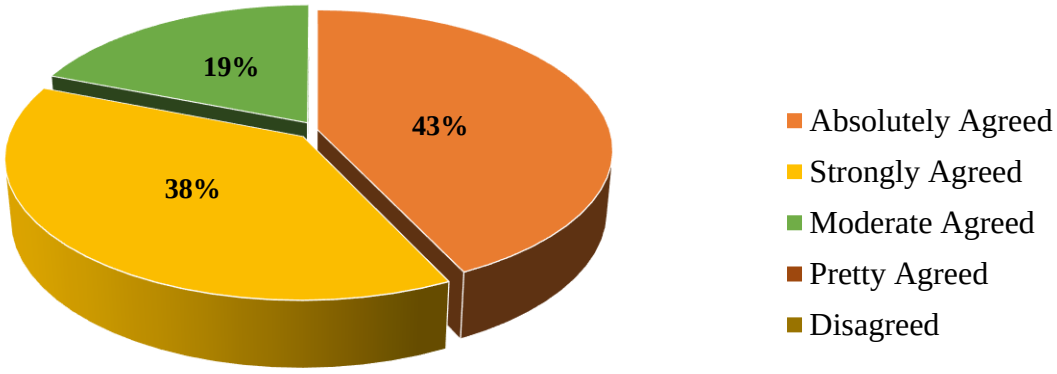
The first part, there are twelve questions and the feedback from participants are presented as the levels of agreement (absolutely agreed, strongly agreed, moderated agreed, pretty agreed and disagrees). The results of this part are displayed the level of agreement from participants in each question as the pie charts.

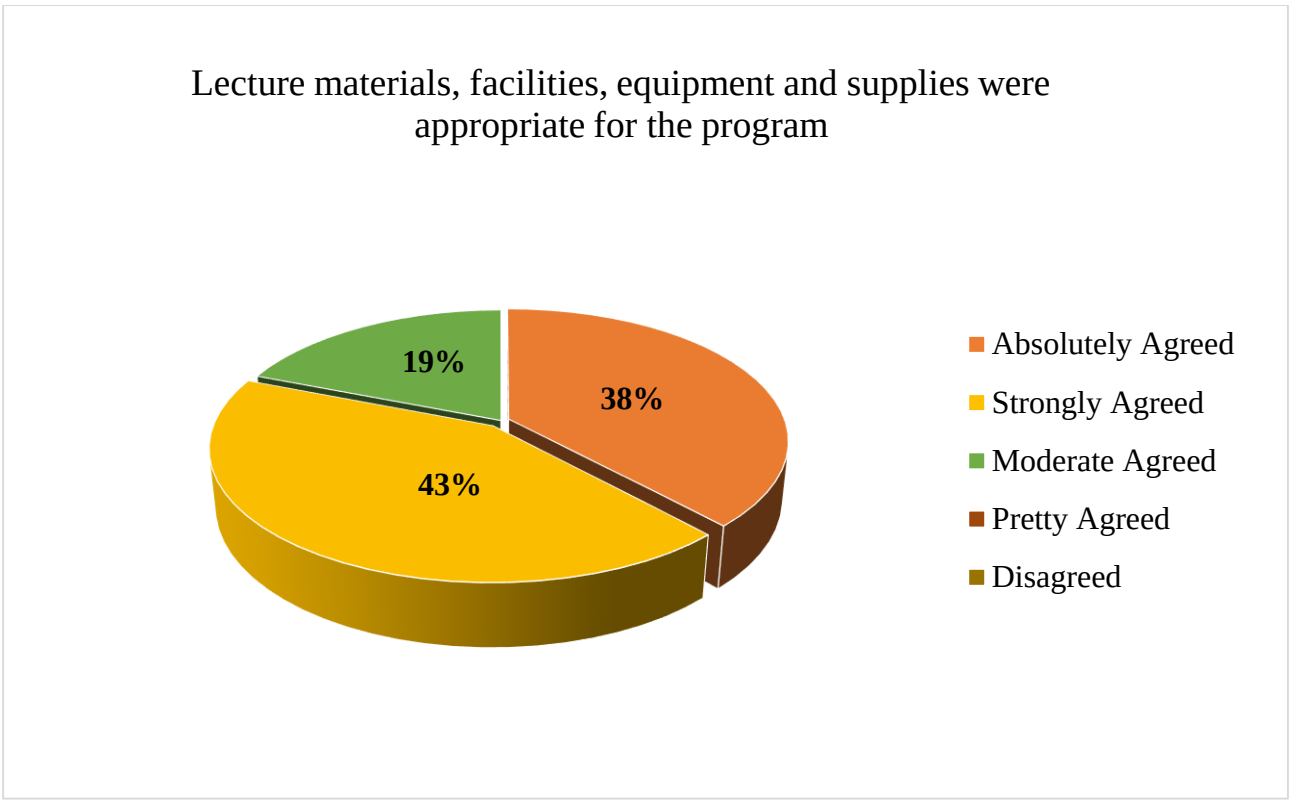


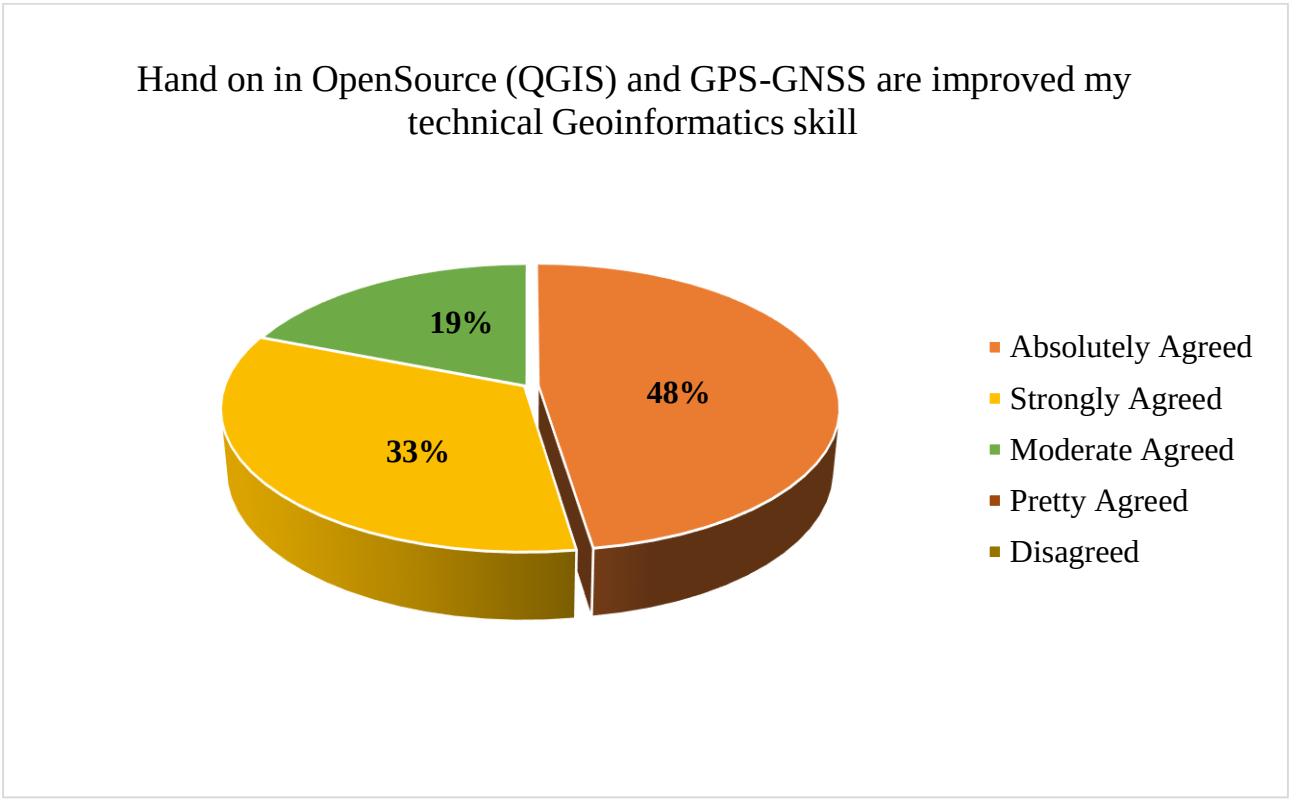
The lectures on Geoinformatics and issues on sustainable development in Asia are interesting for us.



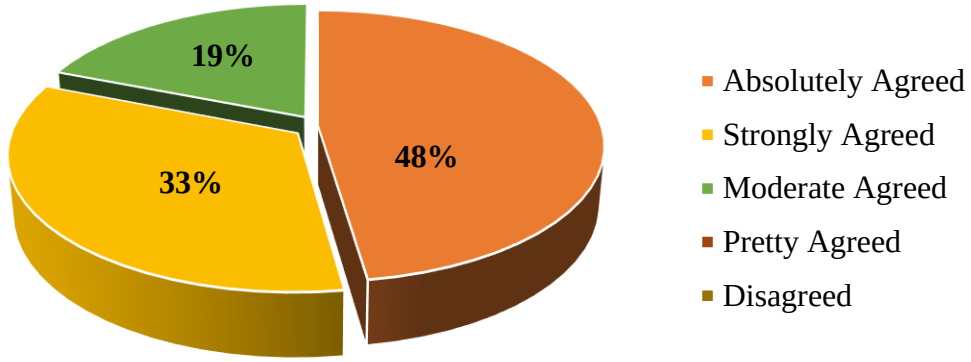
Lecturers are specialist in his/her career, which help us to meet the learning needs in this program.



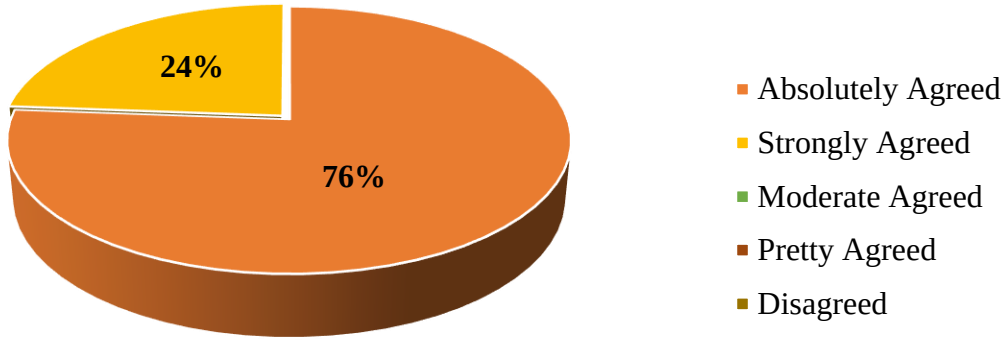

Lecture materials, facilities, equipment and supplies were appropriate for the program
19%
38%
43%
Absolutely Agreed
Strongly Agreed
Moderate Agreed
Pretty Agreed
Disagreed


Hand on in OpenSource (QGIS) and GPS-GNSS are improved my technical Geoinformatics skill
19%
48%
33%
Absolutely Agreed
Strongly Agreed
Moderate Agreed
Pretty Agreed
Disagreed

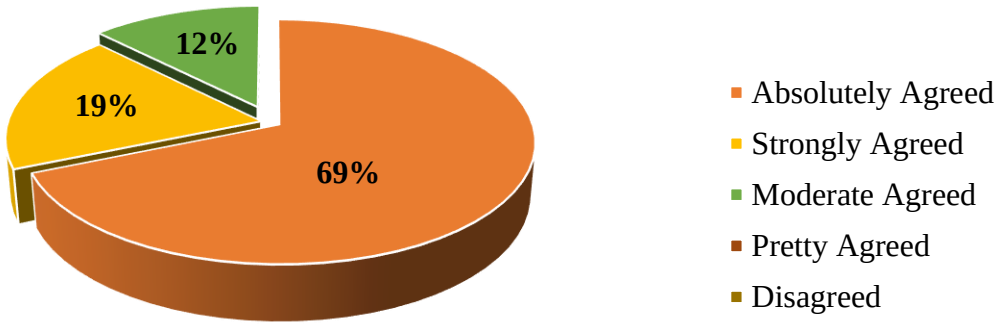
The amount of lecture class, study hours or time dedicated to academic learning were sufficient for us.



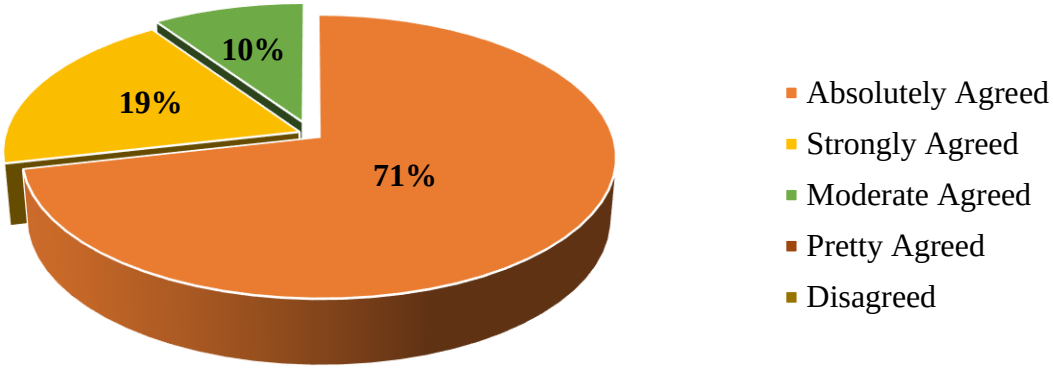
Visiting Geoinformatics organizations (government & private sectors) are good opportunity to learn and building capacity for us

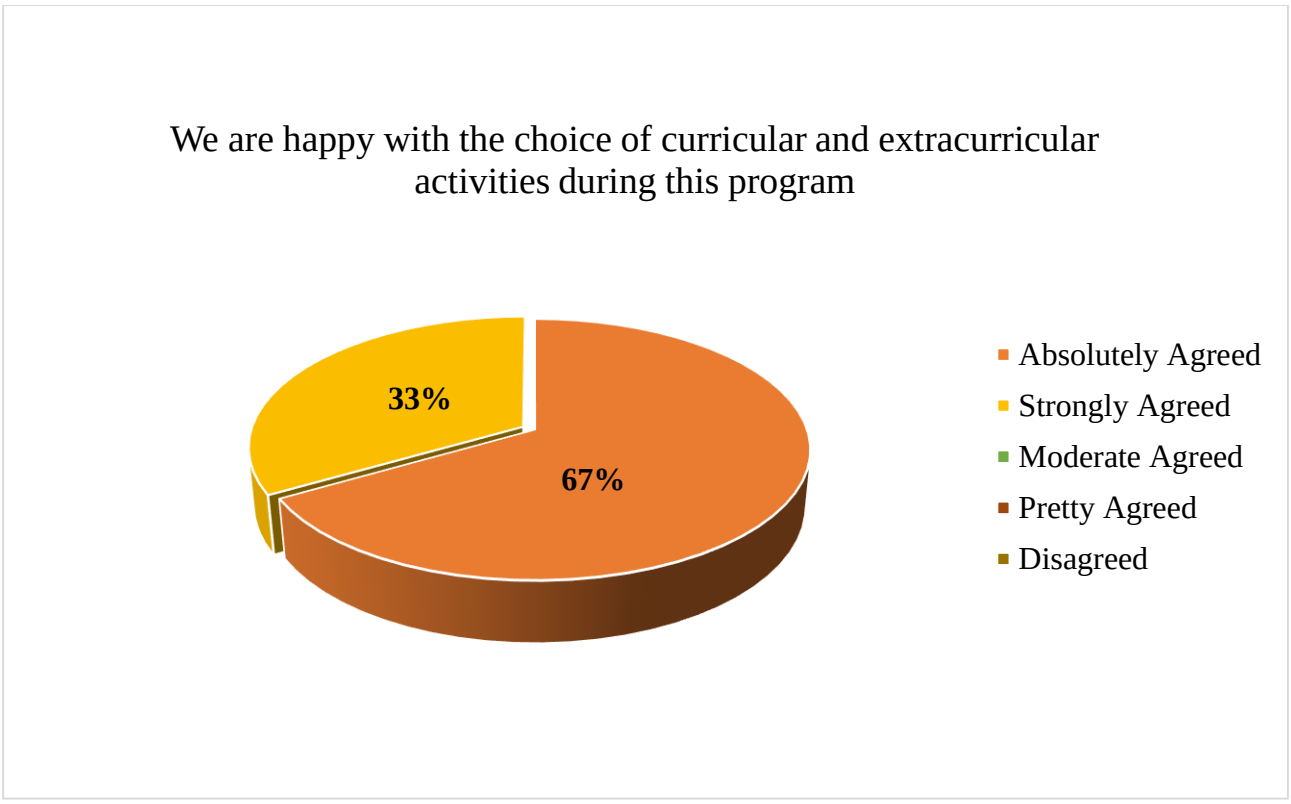


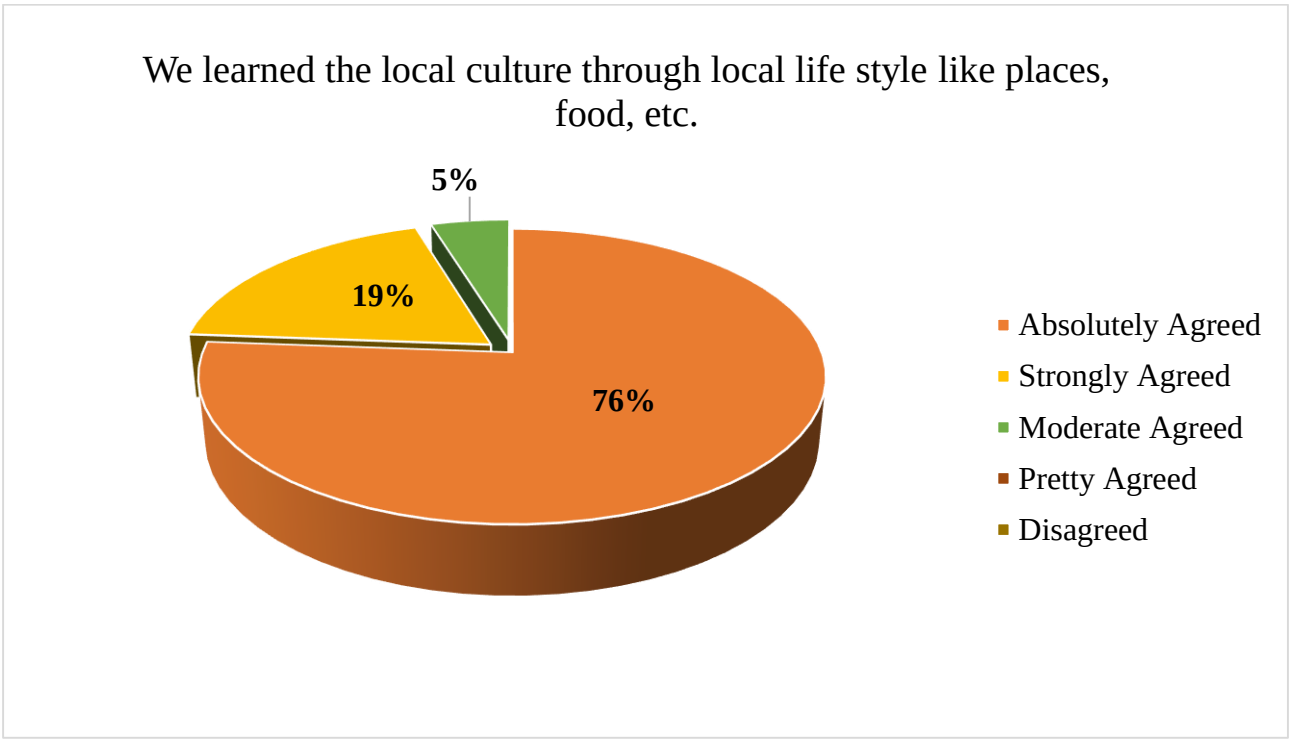
Renewable energy camp & activities in Kanchanaburi encouraging my energy consumption awareness

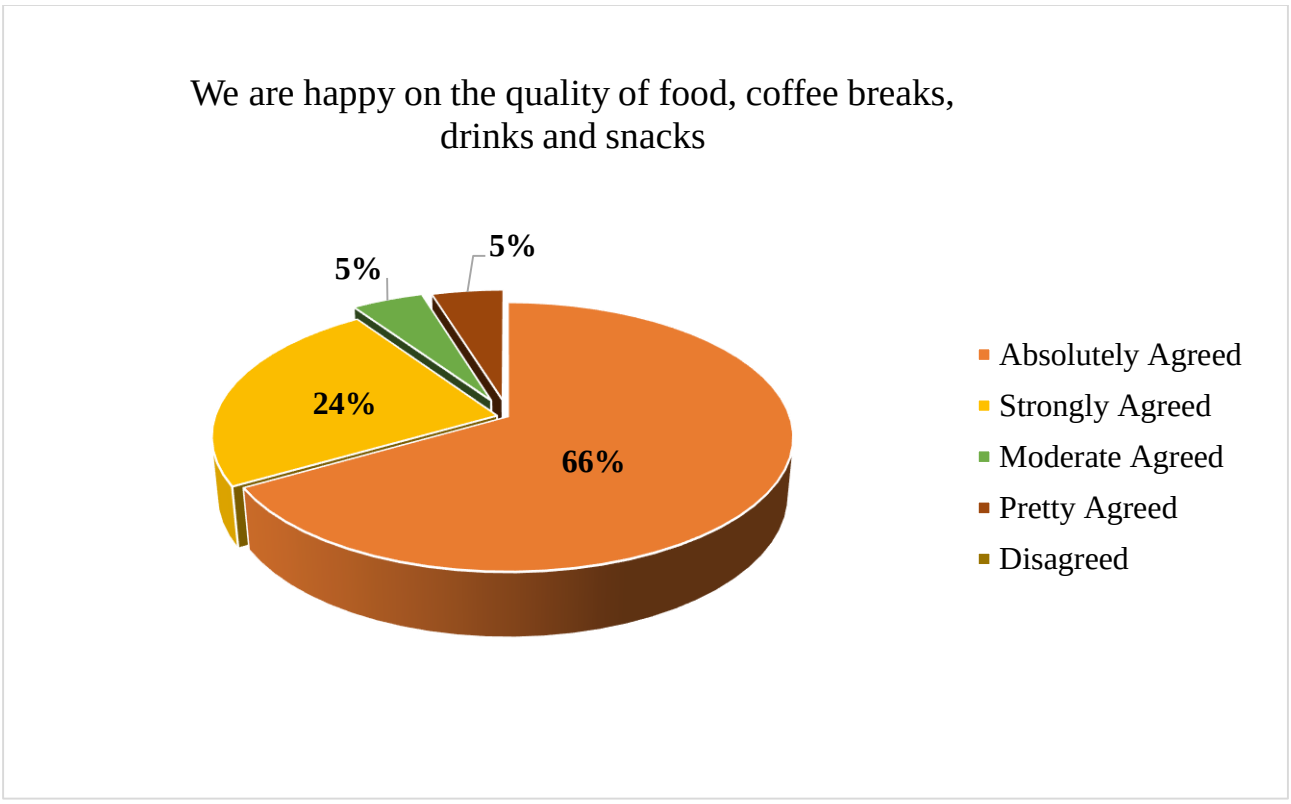


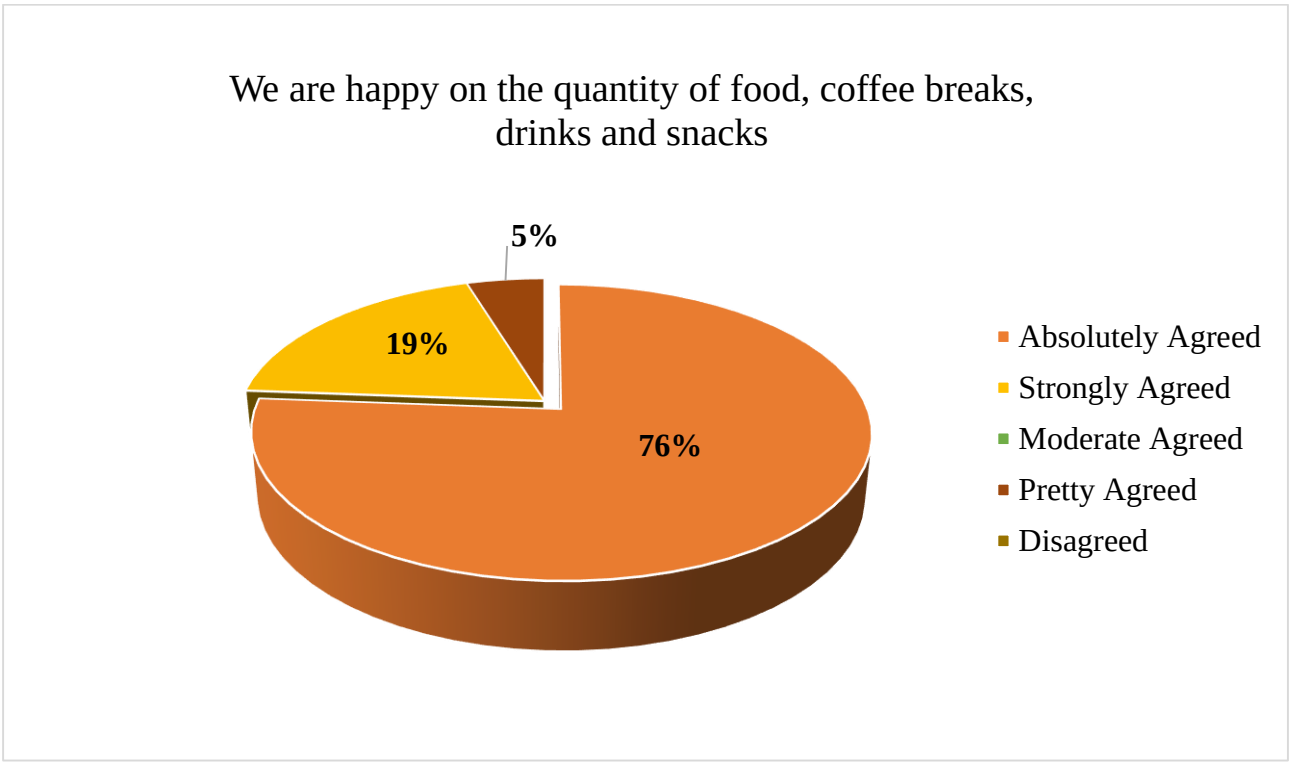
Accommodation (SSH) is comfortable and safety for us.



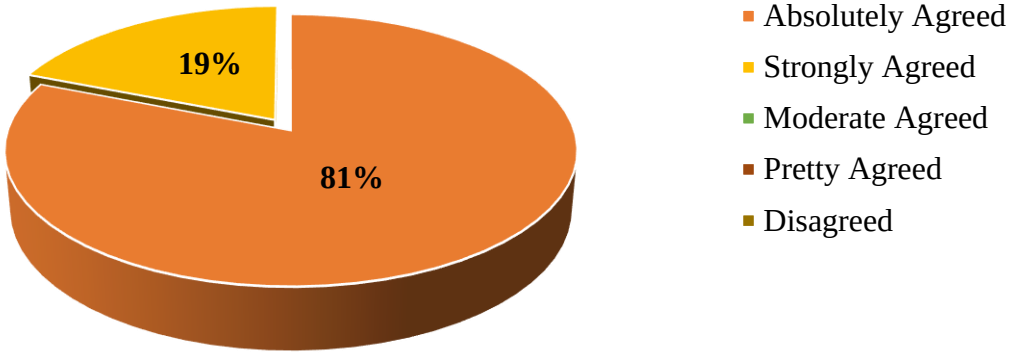

We are happy with the choice of curricular and extracurricular activities during this program
33%
67%
Absolutely Agreed
Strongly Agreed
Moderate Agreed
Pretty Agreed
Disagreed


We learned the local culture through local life style like places, food, etc.
5%
19%
76%
Absolutely Agreed
Strongly Agreed
Moderate Agreed
Pretty Agreed
Disagreed

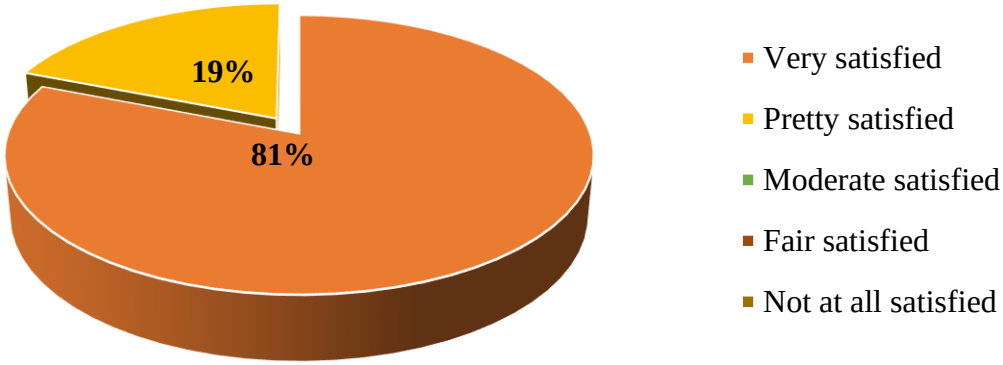

We are happy on the quality of food, coffee breaks, drinks and snacks
5%
5%
24%
66%
Absolutely Agreed
Strongly Agreed
Moderate Agreed
Pretty Agreed
Disagreed

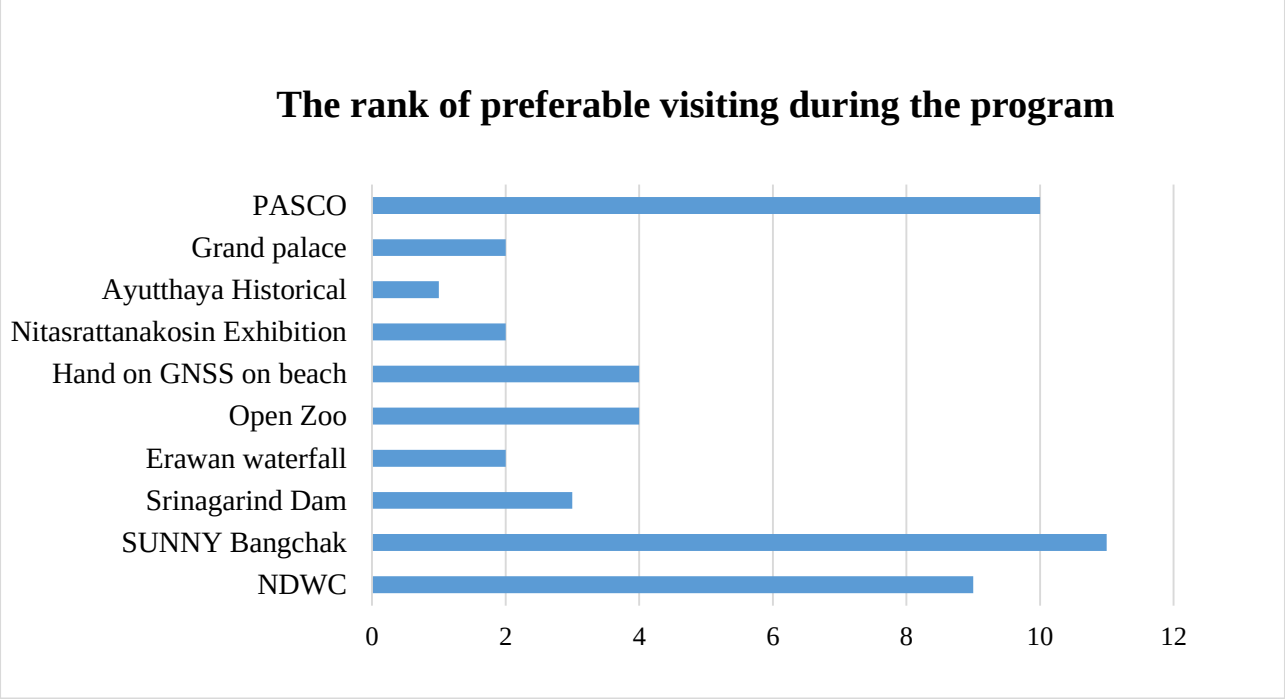

We are happy on the quantity of food, coffee breaks, drinks and snacks
5%
19%
76%
Absolutely Agreed
Strongly Agreed
Moderate Agreed
Pretty Agreed
Disagreed

This program is good chance to have experience in multicultural environment.



Overall, how satisfied were you with your Asian Summer School in Bangkok 2014?





The second part shows the suggestions from participants. There are various comments that very valuable for improving more efficient in the next time.

Here are the comments that received from participants:

Thanks for these two weeks, appreciate and thankful. I can feel efforts on this program, learn a lot. Miss you guys, Summer School 2014
It will be better, if we get the chance to work with more GPS instruments.
It would be the most grateful to you if you give training regular Summer School every year continuously.
Thank for good time!!

This program is very good and get a lot of knowledge from it. However, the lecture time is quite long. It's very hard to absorb all. Some are very technical
Thank you for everything! I'm happy to meet everyone!! I'd like to join Asian Summer School next summer!!! If I get a chance studying in AIT, I'll improve my English skill!! Many thanks!!
No, everything was pretty good. I will find a possible chance to join again.
For me, It was really wonderful experience. With lots of and I unforgettable memories with unforgettable cross culture environment.
1) Please add the Hyper- spectral RS in this course. 2) Add more Hand on about GIS & RS. 3) Add more duration for the language course.

9. Conclusions for improvement

From all suggestions, it can be concluded that the participants were satisfied with the overall of this program. The contents of program can help participant to gain more experience and knowledge, especially the issue of "Geoinformatics and Issues on Sustainable Development in Asia". Additionally, the activities and hands-on were useful for the participants who have the backgrounds on Geoinformatics to improve their technical skills for their career. Under the international society among participants, they can learn and exchange the different cultures including making the international relationships that can expand our networks and make the connections in the future. From last year, there were the suggestions from the participants to conduct the hands-on, therefore the hands-on about Geospatial Analysis using Free Open Sources Software (FOSS) and GNSS were organized for participants in this year. There were many good responds from participants, but some of them suggested that more hands-on should be conducted for the next year such as the Hyper- spectral RS or GPS instruments.

The handouts of lectures were requested from last year. In this year, the handouts of lectures were collected and distributed to all participants. Therefore, it can help them to prepare themselves and catch up the lessons. However, the lecture time might be long and very technical. It is very difficult to understand for some participant especially the participants who do not have the background in Geoinformatics.

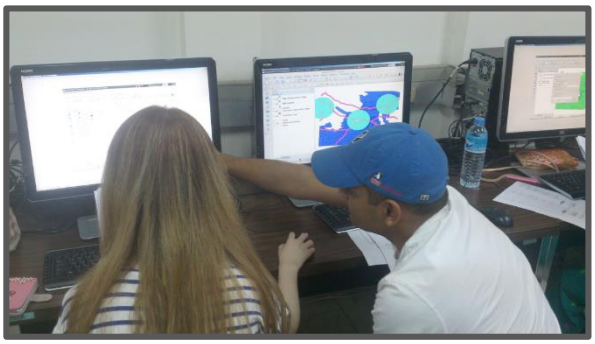
English language is used for studying and there are many technical vocabularies in the content of lectures. Therefore, the intensive English course were conducted for four days in order to give the tips and skills to catch up Asian Summer School lectures. Moreover, the content of English class was related to the basic of remote sensing and GIS that provided for participants who do not have background for preparing them before the program start.

Food for multicultural were provided as much as possible especially vegetarian food. This type of food is provided in AIT but this problems have still occurred when the program was scheduled outside AIT or the countryside.

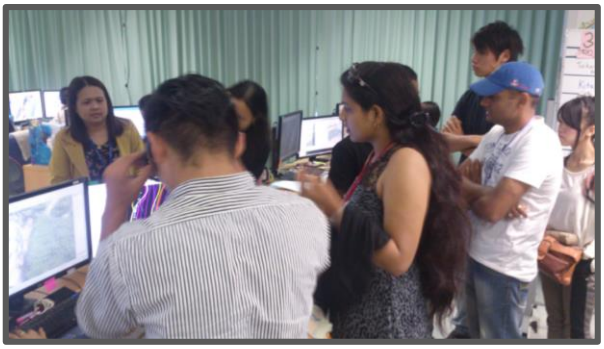
Appendix 1: Summer School 2014 program

Open Ceremony
August 19, 2014

Lecture Times

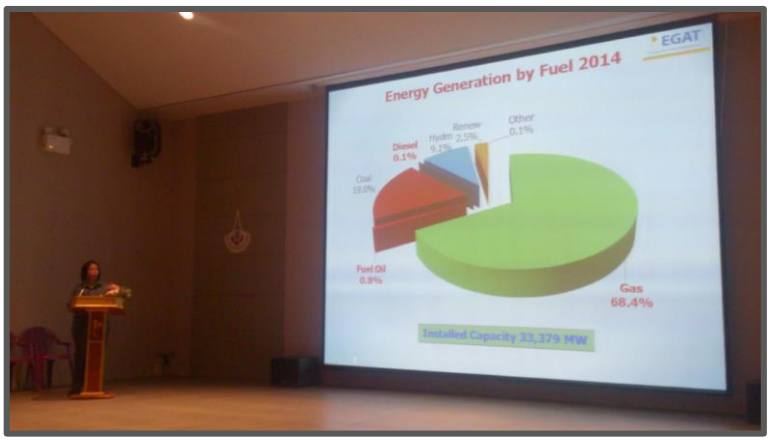


PASCO
21 August 2014

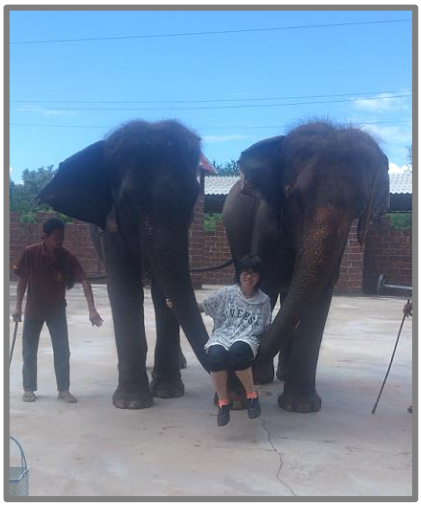


National Disaster warning center (NDWC)
21 August 2014

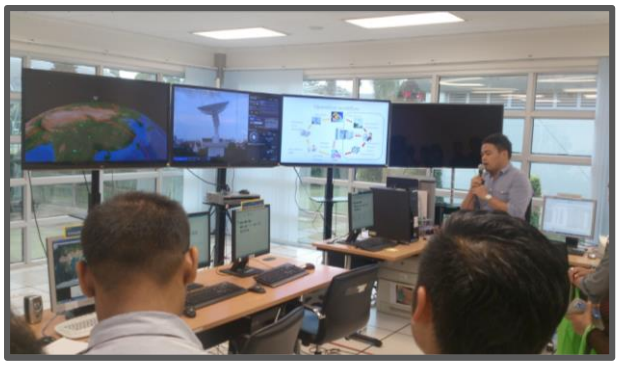
Srinagarind Dam (EGAT), Srisawad, Kanchanaburi:
Hydroelectric Power Plants in Thailand
23 August 2014



Safari Park Open Zoo & Camp, Bo Phloi, Kanchanaburi
24 August 2014



Space Krenovetion Park (SKP), Chiracha, Chonburi
26 August 2014



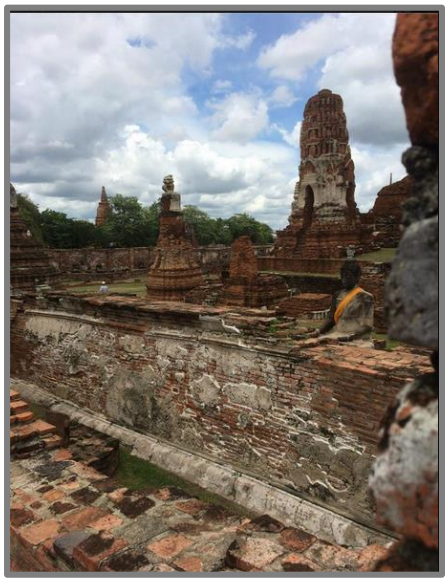
Hand on GNSS on the beach
26 August 2014

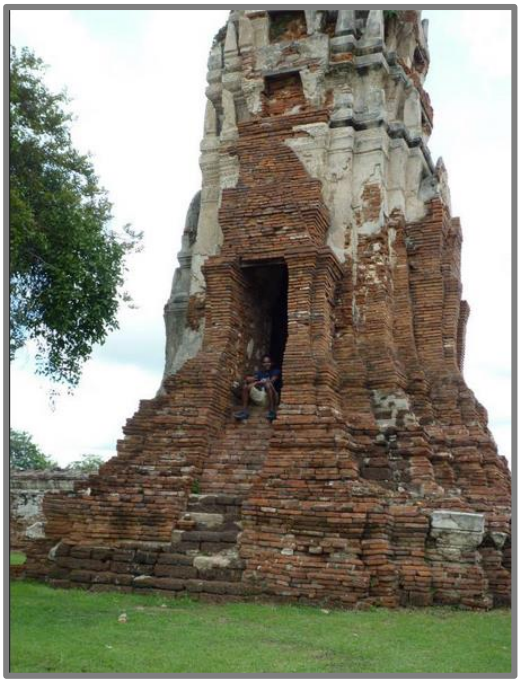
Grand palace: Emerald Buddha
27 August 2014

Nitusrattanakosin Exhibition Hall
27 August 2014

Sunny Bangchak Learning Center
28 August 2014

Ayuttaya Historical Park
28 August 2014





Close Ceremony
29 August 2014

Appendix 2: Program Evaluation Form

Asian Summer School in Bangkok 2014
Geoinformatics and Issues on Sustainable Development in Asia
2014/8/18 – 2014/8/29

This summer, we are pleasure to joined summer program with you. Please provide your feedback based on their overall experience. Each participant need only complete this survey once. If you have already completed a survey, thank you.

	Absolutely Agreed	Strongly Agreed	Moderate Agreed	Pretty Agreed	Disagreed
English class is great academic activity and also benefit in introduced for all participants	(5)	(4)	(3)	(2)	(1)
The lectures on Geoinformatics and issues on sustainable development in Asia are interesting for us	(5)	(4)	(3)	(2)	(1)
Lecturers are specialist in his/her career, which help us to meet the learning needs in this program	(5)	(4)	(3)	(2)	(1)
Lecture materials, facilities, equipment and supplies were appropriate for the program	(5)	(4)	(3)	(2)	(1)
Hand on in OpenSource (QGIS) and GPS-GNSS are improved my technical Geoinformatics skill	(5)	(4)	(3)	(2)	(1)
The amount of lecture class, study hours or time dedicated to academic learning were sufficient for us	(5)	(4)	(3)	(2)	(1)
Visiting Geoinformatics organizations (government & private sectors) are good opportunity to learn and building capacity for us	(5)	(4)	(3)	(2)	(1)
Renewable energy camp & activities in Kanchanaburi encouraging my energy consumption awareness	(5)	(4)	(3)	(2)	(1)

	Absolutely Agreed	Strongly Agreed	Moderate Agreed	Pretty Agreed	Disagreed
Accommodation (SSH) is comfortable and safety for us.	(5)	(4)	(3)	(2)	(1)
We are happy with the choice of curricular and extracurricular activities during this program	(5)	(4)	(3)	(2)	(1)
We learned the local culture through local life style like places, food, etc.	(5)	(4)	(3)	(2)	(1)
We are happy on the quality of food, coffee breaks, drinks and snacks	(5)	(4)	(3)	(2)	(1)
We are happy on the quantity of food, coffee breaks, drinks and snacks	(5)	(4)	(3)	(2)	(1)
This program is good chance to have experience in multicultural environment.	(5)	(4)	(3)	(2)	(1)
Overall, how satisfied were you with your Asian Summer School in Bangkok 2014?	Very satisfied (5)	Pretty satisfied (4)	Moderate satisfied (3)	Fair satisfied (2)	Not at all satisfied (1)

Please rank the top 3 preferable visiting Geoinformatics organizations that you visited during the program.

(PASCO company, National Disaster Warning Center (NDWC), Srinagarind Dam, Erawan waterfall, Open Zoo in Kanchanaburi, Space Krenovation Park (SKP) by GISTDA, Hand on GNSS on beach, Grand Palace, Nitasrattanakosin exhibition, Sunny Bangchak Learning Center or Ayutthaya historical site)

1 ----------

2 ----------

3 ----------

Suggestions

Thank you!