REPORT

Asian Summer School in Bangkok 2016

Geoinformatics for Sustainable Development

15 – 26 August 2016

ASIAN INSTITUTE OF TECHNOLOGY 1959

CHUBU UNIVERSITY AICHI JAPAN

Sponsors Support:

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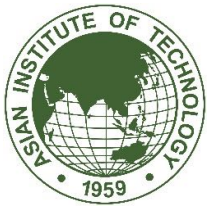

Asian Institute of Technology

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1. Summary

Chubu Institute of Advanced Studies, Chubu University, and Remote Sensing and GIS (RS&GIS) Field of Study, jointly organized the "Asian Summer School in Bangkok 2016" program from August 15th to 26th, 2016 at Asian Institute of Technology, Pathumthani, Thailand. The theme of the program was "Geoinformatics for Sustainable Development".

A total of 16 participants, 10 nationalities, came from 11 universities and organizations located in 9 different countries participated in this program. The average age of participant in the summer school are 22 years old. From Japan, six participants from Chubu University joined. Among participants from Japan, there are five undergraduate and one graduate students (Bioscience and Biotechnology, English language and Culture, Management, Computer Science and International Studies). For non-Chubu students, there are six graduated students: Two Vietnamese, one doctoral student from Feng Chia University (GIS research Centre, Taiwan) and another researcher from Ho Chi Minh City Institute of Resources Geography (GIS and remote sensing research center), one Indian master student from Maharshi Dayanand University (Geoinformatics), one Nepalese master student from Sirindhorn International Institute of Technology (School of Information, Communication and Computer Technologies), one Sri Lankan graduate student from Sabaragamuwa University of Sri Lanka (Department of Remote Sensing and GIS), one Pakistani master student from COMSATS Institute of Information Technology (Department of meteorology). There are four undergraduate students: one Filipino student from Bicol University College of Engineering (Department of Geodetic Engineering), one Cambodia student from Institute of Technology of Cambodia (Department of Geo-resource and Geotechnical Engineering) and two Thai students which are students from Srinakharinwirot University (Geography) and another one from Khon Kaen University (Geoinformatics). The summary of participant are present in Table.1

Several lectures and field trips were conducted during the 12 days of this program. 14 lecturers are from different Fields of Study in AIT (Remote Sensing & GIS, Computer Science and Information Management, Transportation Engineering, Environmental Engineering and Management, Natural Resources Management, Urban Environment Management and Water Engineering and Management). Moreover, six 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), Sirindhorn International Environmental Park, Thai-Danish Dairy Farm, Geo-Informatics and Space Technology Development Agency (GISTDA), Energy Conservation Building, and Ayutthaya Historical Park. Furthermore, it is also to stimulate motivation of undergraduate students to endeavor their own research.

English is used as the main 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 to be ready for lectures conducted in English and well communication during the program, English Communication course organized by AIT language center was provided for participants who were welcome to join as pre-program. During the program, we also requested participants to share their background of study and working, interest and expertise that crossed cultural and disciplinary boundaries. Aside from study, the participants made new friends from different countries as the international society and built up good relationship and connection for support each other in the future. At the end of the program, we received good responses and many positive comments referring to a wonderful time they obtained during the program. This supports the fact that Summer School in Bangkok 2016 Program 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 and AIT jointly applying.

In addition, we would like to thank each department and personnel of Chubu University, Division of Academic Affairs and RS&GIS FoS, also 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., Japan 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.

Table. 1 Summary of participants

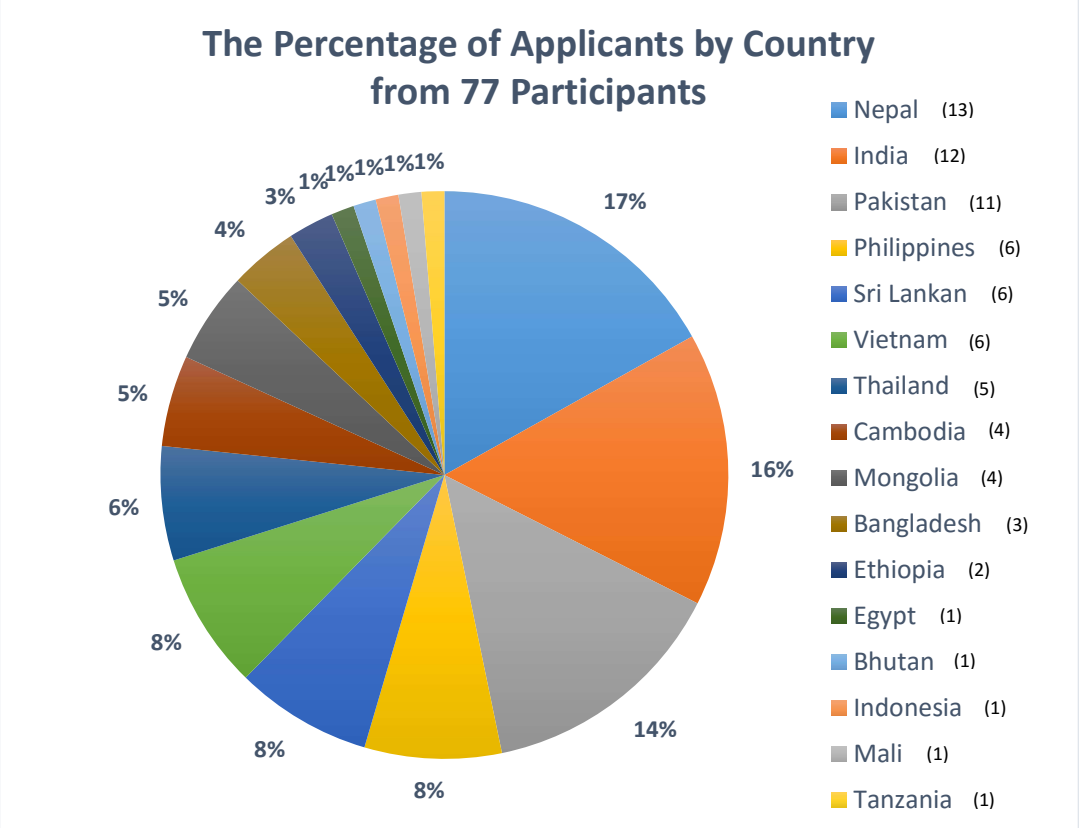
No.	Name	Sex	Age	Country	Grade	Field of study	University/Organization
1	Taichi Fujii	M	24	Japan	M2	Graduate School of Bioscience and Biotechnology	Chubu University
2	Fabio Kimura	M	21	Japan	UG3	English Language and Culture/ College of Humanities	Chubu University
3	Ryosei Narita	M	21	Japan	UG3	English Language and Culture/ College of Humanities	Chubu University
4	Yugo Naito	M	20	Japan	UG3	Management/College of Business Administration and Information Science	Chubu University
5	Haruka Iesaki	F	20	Japan	UG3	Computer Science/College of Engineering	Chubu University
6	Hinako Imae	F	19	Japan	UG1	International Studies/College of International Studies	Chubu University
7	Duong Thi Loi	F	28	Vietnam	Doctoral	GIS research centre, FCU, TAI CHUNG, TAIWAN	Feng Chia University
8	Paramjit Singh Bhambra	M	25	India	Master	Geoinformatics	Maharshi Dayanand University
9	Suman Ghimire	M	23	Nepal	Master	School of Information, Communication and Computer Technologies (ICT)	Sirindhorn International Institute of Technology, Thammasat University
10	Pathira Arachchilage Kalani Randima Lakshani	F	25	Sri Lanka	Graduated	Department of Remote Sensing and GIS	Sabaragamuwa University of Sri Lanka
11	Kanxa Javed	F	25	Pakistan	Master	Department of meteorology	COMSATS Institute of Information Technology
12	Mary Ruth Bongon	F	21	Philippines	UG5	Department of Geodetic Engineering	Bicol University College of Engineering
13	Chanpich Chea	M	22	Cambodia	UG4	Department of Geo-resource and Geotechnical Engineering	Institute of Technology of Cambodia
14	Areeyaporn Sutthawong	F	21	Thailand	UG4	Geography	Srinakharinwirot University
15	Phattamon Heawchaiyaphum	F	21	Thailand	UG4	Geographic Information System	Khon Kaen University
16	Phan Quoc Tran Kha	M	24	Vietnam	Researcher	GIS and remote sensing research center	Ho Chi Minh City Institute of Resources Geography

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 have international sense and awareness of the problem for the participants' thesis.

3. Program Admission

For Summer School in Bangkok 2016, this is the first time that the application was announced publicly starting from the beginning of 2016. This is different from the past that the program usually recruited the participants from the universities and organizations which have the connection with AIT and Chubu University. According to the application by this channel, there are totally 77 applicants from 16 countries who applied for Summer School in Bangkok 2016. The age of applicants ranges from 20 to 48 year old and most of them are 20-30 year old (62 participants or 80%).



In order to select potential candidates, Prof. Honda and Dr. Sarawut, coordinator of the program, made a decision based on certain criteria, background of study, experience, and potential to explore research interest from the program.

4. Participants

Universities and Organizations:

Bicol University College of Engineering

Chubu University

COMSATS Institute of Information Technology

GIS Research Center, Feng Chia University

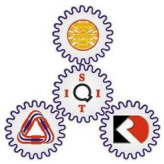
Ho Chi Minh City Institute of Resources Geography

Institute of Technology of Cambodia

Khon Kaen University

Maharshi Dayanand University

Sabaragamuwa University of Sri Lanka



Sirindhorn International Institute of Technology

Srinakharinwirot University

Countries:

Japan

Thailand

Philippine

Brazil

Vietnam

Cambodia

India

Pakistan

Sri Lanka

Nepal

Participants:

Chubu University

Fabio Kimura
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Institute of Technology of | **Ho Chi Minh City Institute** | **Feng Chia University**

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Sabaragamuwa University of Sri Lanka

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(Sri Lanka)
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5. Lecture Program

Date	Topic	Lecturer
9-12 Aug	RS-GIS Summer English Communication Program	AIT Language Center
15 Aug	Ubiquitous Geoinformatics	Prof. Kiyoshi Honda
	Ubiquitous Computing and Location-Base Service (LBS) for the Spatial Problem Solving	Dr. Sarawut Ninsawat
	Health GIS	Prof. Nitin Kumar Tripathi
16 Aug	Geoinformatics for Disaster and Sentinel Asia	Dr. Masahiko Nagai
	Aerospace and Human Space Technology	Prof. Tai Nakamura
	Big Data for Society	Dr. Apichon Witayangkurn
18 Aug	Mobile video processing platform for agricultural	Dr. Matthew N. Dailey
	Public Transportation Problems and Green Solutions in Bangkok	Dr. Surachet Pravinvongvuth
	Satellite Monitoring for Air Quality Management	Prof. Oanh Nguyen Thi Kim
19 Aug	Hand on : Geospatial Analysis using Free Open Sources Software (FOSS)	Dr. Sarawut Ninsawat
	Hand on : Crowdsourcing for Geospatial data (OSM)	Dr. Sarawut Ninsawat
22 Aug	Natural Resources Management in Asia	Prof. Rajendra Shrestha
	Sustainable Mega-Cities and Urban Planning	Dr. Sohee Minsun Kim
	Geospatial and Space Technologies in International Development Projects	Dr. Hiroyuki Miyazaki
24 Aug	UAV Demonstration	Dr. Sarawut Ninsawat
	Global Climate Change and Water Resources Management	Dr. Sangam Shrestha
	Current Status of Wastewater and Fecal sludge Management in Thailand	Dr. Thammarat Koottatep

6. Field Trip Program

Date	Field Visiting
17 Aug	PASCO (Thailand) Co., Ltd.
	National Disaster Warning Center (NWDC)
21 Aug	Thai-Danish Dairy Farm
23 Aug	Geo-Informatics and Space Technology Development Agency (GISTDA)
25 Aug	Ayutthaya Historical Park
	Energy Conservation Building

7. Comments on Lectures

All participants were requested to give the feedbacks on the lecturers by submitting a homework every day. The main purpose of a homework is to obtain what the participants have learned from the lecture and also, to get the comments and suggestions for further improvement. The table below presents the result of participants' submissions.

Name	August 2016									
	15	**16**	**17**	**18**	**19**	**20**	**22**	**23**	**24**	**25**
Fabio Kimura	O	O	O	O	O	O	O	O	O	O
Ryosei Narita	O	O	O	O	O	O	O	O	O	O
Taichi Fujii	O	O	O	O	O	O	O	O	O	O
Yugo Naito	O	O	O	O	O	O	O	O	O	O
Haruka Iesaki	O	O	O	O	O	O	O	O	O	O
Hinako Imae	O	O	O	O	O	O	O	O	O	O
Areeyaporn Sutthawong	O	O	O	O	O	O	O	O	O	O
Phattamon Heawchaiyaphum	O	O	O	O	O	O	O	O	O	O
Paramjit Singh Bhambra	O	O	O	O	O	O	O	O	O	O
Chanpich Chea	O	O	O	O	O	O	O	O	O	O
Phan Quoc Tran Kha	O	O	O	O	O	O	O	O	O	O
Duong Thi Loi	O	O	O	O	O	O	O	O	O	O
Suman Ghimire	O	O	O	O	O	O	O	O	O	O
Mary Ruth Bongon	O	O	O	O	O	O	O	O	O	O
Kanxa Javed	O	O	O	O	O	O	O	O	O	O
Pathira Arachchilage Kalani Randima Lakshani	O	O	O	O	O	O	O	O	O	O

The meaning of the symbols

O = Submitted
X = Not submitted
** = Cannot attend because of urgent task

In this section, each lecture will be briefly described and some of the comments from participants related to that lecture will be presented.

RS-GIS Summer English Communication Program

Conducted by: AIT Language Center, **Date:** 9-12 August 2016

The participants learned how to introduce themselves. Also, they learned about the listening process including the common problems in listening and how to apply listening strategies in their studies and lives. Moreover, the class also introduced the participants to listening and presentation skills related to topics conducted in Summer School in Bangkok 2016 program such as RS-GIS, Urbanization and Mapping Population, Environmental GIS, Climate Change and Global Warming. The lectures used many methods in the class such as teaching, group discussion, brainstorming, and preseason in order to help the participants communicate efficiently.

Fabio Kimura *(3rd-year undergraduate student in* English Language and Culture*)*

"I joined English class because to improve my English skills before taking the main course. I could learn strategies to listen to a course and the third and fourth day we practiced a lot to listen and write and say the answer We also did an interview for people from all different countries which was fun and exciting."

Ryosei Narita *(3rd-year undergraduate student in* English Language and Culture*)*

"I joined English class because I didn't have a confidence of my English ability"

Yugo Naito *(3rd-year undergraduate student Management/College of Business Administration and Information Science)*

"I joined this class because I want to improve my English skill. And I learned how to listen in English and learned about green energy. It doesn't study in Japan for me because my major is economics, so it was really interesting."

Hinako Imae *(1st-year undergraduate student International Studies/College of International Studies)*

"I can't speak English well. The class was very fun."

Taichi Fujii *(Graduate student School of Bioscience and Biotechnology)*

"My English skill is not good. I want to study English. And I want to be listening comprehension."

Ubiquitous Geoinformatics

Conducted by: Prof. Prof. Kiyoshi Honda, **Date:** 15 August 2016

The participants learned about what Ubiquitous Geo-informatics is and how computers and sensors are utilized with Geo-informatics for each utility such as agriculture, disasters and environment, satellite overview, data assimilation, integration and application of Remote Sensing, field sensor, UAV and utilization, WEBGIS and geospatial data.

Duong Thu Loi *(Doctoral student GIS research Centre, FCU)*

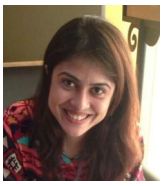
"I learned lots of useful knowledge about satellite remote sensing, field sensor network, real time mapping, data assimilation, modelling and high performance computing. Modelling and simulation are my research direction in the present as well as in the future."

Suman Ghimire *(Master student Communication and Computer Technologies (ICT))*

"I was highly impressed with his knowledge in the field of Geoinformatics. I got to know about his research interests in UAV, sustainable forest hydrology and modeling aspects. I also came to know about his projects at Annapurna Conservation Area in Nepal where he established some weather stations in collaboration with NTNC and ICIMOD (an INGO working for Mountains and People). Being a geoinformatics enthusiast interested in field of Sustainable Forest and Environment, I will try my best to grab as much knowledge in this field and I am pretty sure he would be a great person to be guided with."

Paramjit Singh Bhambra *(Master student Geoinformatics)*

"This lecture brush up my some basic concepts of GIS and Remote sensing and how we can publish or provide GIS information with the help some ubiquitous resources like Car Navigation, LBS, sensor etc. I also learned the various application of Agriculture, Radar, and U-V imaging."



Kanza Javed *(Master student Department of meteorology)*

"He gave us basics of geoinformatics in a very detailed or easiest way like which satellite have high or low resolutions and what is radio camera data (SAR) and how we can use these application in different domain to make our life better as in agriculture (observation of field , or how much yield we can get ?) Or how real time mapping is helping us to design our life in a better way."

Ubiquitous Computing and Location-Base Service (LBS) for the Spatial Problem Solving

Conducted by: Dr. Sarawut Ninsawat, **Date:** 15 August 2016

From this course, the participants learned about 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.

Chanpich Chea *(4th-year undergraduate student Department of Geo-resource and Geotechnical Engineering)*

"I love his pronunciation I can listen all what he said. I've know that many application need GIS. When I chick in in Facebook, I never know that I am using the LBS. I can be clear about:
1) Internet+GIS= WebGIS 2) Internet+mobile= mobile internet
3) Mobile devices+GIS=Mobile GIS then Internet+mobile device+GIS= LBS
I can analysis photo as AR or VR after this class."

Taici Fujii *(Graduate student School of Bioscience and Biotechnology)*

"I learned the applications that utilize location information data and I learned about future techniques using it. I thinks AR technology is very interesting. Now, I am investigating the cause of the animals are attracted to the road, combining the data of road company and AR. The combined data will reduce the accident."

Phan Quoc Tran Kha *(Researcher GIS and remote sensing research center)*

"With this course, I knew the LBS – location base service as an intersection of three technologies: GIS/spatial database, internet, mobile devices. I also knew what is augmented reality and virtual reality. That is an interesting knowledge for me. With VR technology, people can see the real life with more and more information."

Phattamon Heawchaiyaphum *(4th-year undergraduate student Geographic Information System)*

"I have learned about technology of GIS in current such as sites, mobile phones. And I have learned about augmented reality, virtual reality. For apply in the future. I will applied with my project because my project make about application of GIS."

Health GIS

Conducted by: Prof. Nitin Kumar Tripathi, **Date:** 15 August 2016

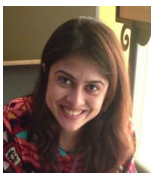
The participants learned about Geomedicine by using GIS as the tools for decision making and planning. How to apply geography to link the human health and social well-being for managing environmental inventories and exposure the phenomena. Additionally, the application of GIS for health in many case 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.

Mary Ruth A. Bongon *(5th-year undergraduate student Department of Geodetic Engineering)*

"We can prevent illness and diseases, by analyzing the trends, and using spatial data to understand more the nature and causes of these illnesses. It may of several factors, but let's look at the bigger picture. Sometimes, this disease is only for a certain place. So we would think, why is this not happening in the other place and not in the other."

Areeyaporn Sutthawong *(4th-year undergraduate student Geography)*

"I have learned about GIS can estimate and verify disease. I will apply to develop health nutrition such as use advantage of topographic feature to create suitable nutrition for people in theirs landscape."



Kanza Javed *(Master student Department of meteorology)*

"This is the most domain in which GIS is helping us .by GIS can make buffer which area got more effect by a particular disease or which can be get effected. Or measuring the affective which calculation we should prefer."

Duong Thi Loi *(Doctoral student GIS research Centre, FCU)*

"I learned really helpful knowledge about the application of GIS for health. From that, learners can realize the importance of GIS with health. I will spend time for studying more about this topic to apply for the case study in Vietnam. Because Vietnam has many problems the same Thailand.)"

Hinako Imae *(1st-year undergraduate student International Studies/College of International Studies)*

"I learned GIS is useful to solve the health problems like malaria.)"

Geoinformatics for Disaster and Sentinel Asia

Conducted by: Dr. Masahiko Nagai, **Date:** 16 August 2016

The participants learned 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.

Fabio Kimura *(3rd-year undergraduate student English Language and Culture)*

"It was interesting to know that it was used in the big earthquake in Japan Using geoinformatics, they could see how long the wave could reach and also what building survived or not."

Suman Ghimire *(Master student Communication and Computer Technologies)*

"I learned different approaches and technologies used for monitoring and minimizing the disaster. This session was really valuable as in present context there are a lot of disasters taking place around the globe and this course was essential for knowing the root causes and adaptation methodologies. In future I want to apply lessons learned from this session to help aware people and apply adaptation approaches in my country."

Phattamon Heawchaiyaphum *(4th-year undergraduate student Geographic Information System)*

"I learned about disaster that has apply with GIS and satellite calamitous. In future I will application this knowledge with my field."

Haruka Iesaki *(3rd-year undergraduate student Computer Science/College of Engineering)*

"Asia is the most damaged all over the work. I'll use to my study that how to get user's information by using satellites."

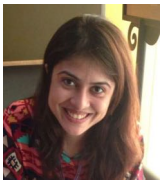
Paramjit Singh Bhambra *(Master student Geoinformatics)*

"I cleared all my concepts about tsunami in this lecture, he also shared some of his personal experience with us that at the time of disaster what he did so it was very nice and he also showed us the technique which we are using these days for identifying tsunami, earthquake etc. Disaster management is my area of interest so it will help me to write any article or this knowledge help me at the time of my dissertation."

Aerospace and Human Space Technology

Conducted by: Prof. Tai Nakamura, **Date:** 16 August 2016

The participants learned about Space engineering which addresses outer space observations, utilizing resources in space, building infrastructures in space and developing new technologies.



Kanza Javed *(Master student Department of meteorology)*

"This is very keen and complicated but as an emerging field so we should focused this. Prof Tai explain that technological parts so good and which characteristics or elements do we have to in mind while talking space environment."

Taichi Fujii *(Graduate student School of Bioscience and Biotechnology)*

"I learned living environment in space. Biological experiments in space and about ISS."

Duong Thi Loi *(Doctoral student GIS research Centre, FCU)*

"This course provided the knowledge about Aerospace technology and human space technology. It is really new knowledge with me. The knowledge provided is so deep. However, this is also an interesting topic. I may spend more time to study more about this knowledge in the future."

Yugo Naito *(3rd-year undergraduate student Management/College of Business and Information Science)*

"I learned about Space Technology. There are a lot of satellite in space. The satellite made to cooperate other country. And we can help each other country. I was fun to know about it."

Suman Ghimire *(Master student Communication and Computer Technologies)*

"I flourished my knowledge on the Aerospace Technology from this session. Although I had curiosity right from my childhood days but never had the background theory of what goes behind the satellite launch and its approaches. This course was really interesting and will definitely apply the lessons learnt from this in future."

Big Data for Society

Conducted by: Dr. Apichon Witayangkurn, **Date:** 16 August 2016

From this course, the participants learned how to use ICT for data processing and data management. The lecture also introduced the participant to know Hadoop which is the data storage and it can manage the data efficiently.

Mary Ruth A. Bongon *(5th-year undergraduate student Department of Geodetic Engineering)*

"Data are just numbers or plain texts with no meaning. But when you process these data and present it on graphs, and such kind, it is called information. So a data with a meaning is information. But how we process and analyze these information and data requires knowledge. There are 3 steps to data processing. First is the data itself. You need the data to be processes. It is called input. The next step is data processing. This is the stage where the input is processed by classification, sorting, converting data into information. After you processed the input, the output is the final product. But sometimes there are datasets that are too big. They exceed the capacity of the computing systems. This data is called big data. One example of big data is GPS traces. Big data can be used for disaster analysis, like the mobility of the people before and after a disaster. This can be very useful to disaster agencies."

Chanpich Chea *(4th-year undergraduate student Department of Geo-resource and Geotechnical Engineering)*

"Big data is the newly lesson for me I can learn a lot of data, how to manage data, how to process data, how to use the data. I will apply it when I start survey or select data"

Phan Quoc Tran Kha *(Researcher GIS and remote sensing research center)*

"I know about big data before this course, however this course helps me more understand about the applications as well as using big data in research. These are new and interesting knowledge. I will apply for my research in the next time."

Areeyaporn Sutthwong *(4th-year undergraduate student Geography)*

"I have learned, how to data processing. Big Data is complexity. In the future, I will apply it with my research."

Mobile video processing platform for agricultural

Conducted by: Dr. Matthew N. Dailey, **Date:** 18 August 2016

The participants learned 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.

Hinako Imae *(1st-year undergraduate student International Studies/College of International Studies)*

"This class was very important for me because I'm interested in agriculture. I learned that agriculture makes progress every day and GIS is apply improvement of agriculture."

Chanpich Chea *(4th-year undergraduate student Department of Geo-resource and Geotechnical Engineering)*

"Using robot and sensor, the productivity of agriculture can be increased by monitoring there is certain diseases or not so that also helps to control the quality. Including weathering. He also explains about vacuum cleaner and mobile video processing for agriculture crap mapping to find fruit religion and perform 3D reconstruction of the point religion. In my country, Agriculture is the priority sector. So I hope that it will be appear in my country. There is much useful advantage when we apply GIS agriculture applications to this sector."

Ryosei Narita *(3rd-year undergraduate student English Language and Culture)*

"I knew high-tech devices are used at agriculture. The devices have Wi-Fi and solar panel charger, and inform climate, temperature, humidity to farmer. The farmer can know information of fields by mobile device. Observing with moiling can apply to ecology, too."

Duong Thi Loi *(Doctoral student GIS research Centre, FCU)*

"This course provided the knowledge about mobile video processing platform for agricultural. In addition, learners have more understand about role of satellite in agriculture management as well as the role of natural factors to develop of plants. There are many deep knowledge in this course, and it is maybe a suggestion for my research direction in future."

Public Transportation Problems and Green Solutions in Bangkok

Conducted by: Dr. Surachet Pravinvongvuth, **Date:** 18 August 2016

The participants learned how Thailand manage public transportation preparing for ASEAN Community. The historical data and background of traffic problem in Thailand was introduced. After that, the policy and strategies in each types of transportation such as mass transit, Taxi, boat, etc. were also introduced based on Green Solutions.

Areeyaporn Sutthawong *(4th-year undergraduate student in Geography)*

"I have learned Public Transportation Problem in Thailand. This big problem because of Thai behavior, government manage, corruption etc. This problem occur in Developing countries. I think in the future my country should take development seriously. Apply quality and quantity method."

Paramjit Singh Bhambra *(Master student Geoinformatics)*

"Traffic jam is one of the leading problem in developing countries so, I learned the new techniques that how to improve it, about future policies as well, that if we do such things then we can able to solve this problem, sir also explain all the problems that what Thailand or Bangkok is facing and it was very knowledgeable lecture. Traffic jam is also a big problem in India, as I am from India, so it will help me to write articles over traffic jam in India, where I can suggest the points to improve."

Yugo Naito *(3rd-year undergraduate student Management/College of Business and Information Science)*

"In Japan case, traffic congestion is not very much, but sometimes we happen to big traffic congestion, especially developing country has also super big congestion. I learned about how to decrease traffic congestion that is solution. This is an instructive lecture for me."

Mary Ruth Bongon *(5th-year undergraduate student Department of Geodetic Engineering)*

"Traffic problem is a very big issue especially in most of the developing countries. Building more roads is not the solution to traffic problems. It will only cause more difficulty, like more congestion in the inner city and going to the city is getting more difficult. The most effective way to address this problem is to encourage mass transit for public transportation and discourage car users."

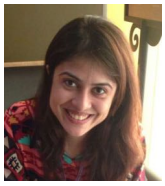
Satellite Monitoring for Air Quality Management

Conducted by: Prof. Oanh Nguyen Thi Kim, **Date:** 18 August 2016

From this class, the participants learned about air pollution and its types, sources, causes, and effects. Moreover, they learned about how to monitor air pollution by several methods. Lastly, they learned about how satellite can monitor the air pollution based on case study.

Pathira Arachchilage Kalani Randima Lakshani *(Graduate student Department of Remote Sensing and GIS)*

"The air pollution in developing countries is a big concern in the world now.The smaller particles of the air pollutants can cause more health damages. Ground Based automatic monitoring stations provide the pollution data with good time resolution. It measures the parameters like solar radiation, wind direction, precipitation, etc."



Kanza Javed *(Master student Department of meteorology)*

"She explained so well what air pollution is and how it effecting individual as well as the whole globe. But it's more alarming in developing countries. What should we have to do to cut % off and how to regularly monitor by remote sensing but it also give uncertainties."

Taichi Fujii *(Graduate student School of Bioscience and Biotechnology)*

"I learned about air pollution monitoring of Asia. And also learned about air pollutants. I learned about the problem of air pollution from analysis of a combination of the measurement data and the satellite image."

Mary Ruth Bongon *(5th-year undergraduate student Department of Geodetic Engineering)*

"Air pollution in the developing countries is worse. There are many sources of air pollution, most of which are from burning. Air pollution is dangerous to the health. Many people die due to lung diseases. The use of satellites for monitoring of air quality is a big help. We can also monitor the air quality by traditional ground based monitors. But using satellite is cheaper than that of ground monitoring."

Yugo Naito *(3rd-year undergraduate student Management/College of Business and Information Science)*

"I learned about how to connect air pollution and monitoring. Pollution is really bad our body. Nowadays, there are a lot of pollution problem in the all over the world because of evolution. So we can know where is the most dangerous area and how much pollution does it have area to use satellite system."

Hand on: FOSS & Crowdsourcing for Geospatial Data (OSM)

Conducted by: Dr. Sarawut Ninsawat, **Date:** 19 August 2016

The participants learned the principle of GNSS and knew how it works. Also, they had opportunity to use GNSS receiver in AIT and analyzed the result. Furthermore, afternoon session, they were assigned task to position the certain things in AIT and then located and gave the information by using Openstreetmap.

PHAN QUOC TRAN KHA *(Researcher GIS and remote sensing research center)*

"Today, I learned about what is the OSM - Open Street Map, how to upload and download data with OSM. I added the new location in AIT as the artworks and modified the attributes of law son location by OSM. With this course, I knew how to use OSM to collect data for my work, my study and it's free. I love travel and I can trace my new beautiful places on map by OSM. It really useful. I learned about how to use QGIS for analyzing the Geo-spatial data. QGIS is the open source software that can do almost function and analyze in GIS like ArcGIS software. In this course, I used QGIS to analyzing and find the land suitability with tools as Query builder tool, Buffer tool, and Map Navigation tool bar. That is actual case in our life. We want open a new store, we have to know where the land suitability for move, customers, sourcing is. That is a big economic problem which GIS can resolve them."

Suman Ghimire *(Master student Communication and Computer Technologies)*

"I learnt several possibilities of mapping for the benefit of community. Open data has a great potential for humanity. The idea of combining several efforts to map has a great potential to provide humane solutions to the community. With the idea from this lecture I will implement it to help my community by locating its attractions, capacity area and benefit community with free openly accessible data."

Yugo Naito *(3rd-year undergraduate student Management/College of Business and Information Science)*

"This class was really fun for me. I learned how to make map and how to use to solve a problem. We walked in AIT to make a map. This map was actual. Our making a map was used like a Pokemon-GO in Pokestop. I could know how to make Pokestop. Pokemon-GO has needed GIS skills. The skill can use a lot of areas and it is a very useful. I may connect my major that is economics. When someone need a help I can help them to use a GIS. I think I may be able to apply GIS to marketing and a management, so I want to study the thing and I need to acquire the GIS."

Natural Resources Management in Asia

Conducted by: Prof. Rajendra Shrestha, **Date:** 22 August 2016

The participants obtained the basic knowledge about natural resource in the world. Moreover, they learned how the world population relates to the consumption of natural resource and its effects becoming issues in Asia. Lastly, they learned about natural resources management philosophy and actions according to sustainable development strategy.

Duong Thi Loi *(Doctoral student GIS research Centre, FCU)*

"This course provided for me a lot of useful knowledge. Firstly, it helps me to know about natural resources and situation of natural resource outlook of Asia. Secondly, this course provides the knowledge about vital signs and population. Finally, I also gain knowledge about natural resource management philosophy and actions."

Areeyaporn Sutthawong *(4th-year undergraduate student Geography)*

"I have learned now natural resources decrease because increasing population, human activity and extravagant resource consumption etc. Natural Resources Management is the management of natural resources in an integrated fashion recognizing the values of both conservation and productive. I will apply with my way of life. I will use natural resource good quality and quantity."

Phattamon Heawchaiyaphum *(4th-year undergraduate student in Geoinformatics)*

"The topic really interesting. It is very vital for sustainable development. We must learn and create awareness regarding proper and wise use of available resources as it is limited. We must respect "what nature provide us". I learned different adaptation practices that we could follow to get maximum efficiency. I will apply each and every aspects of the session to help create awareness to the people of my community."

Fabio Kimura *(3rd-year undergraduate student English Language and Culture)*

"I learnt that natural resources aware very important. Especially water, some countries do have scarcity of water And even countries that are not facing to that problem will face. So we should manage carefully."

Sustainable Mega-Cities and Urban Planning

Conducted by: Dr. Sohee Minsun Kim, **Date:** 22 August 2016

The participants learned about urbanization and its effects. Furthermore, the lecturer introduced how GIS and remote sensing is important for spatial analysis such as site survey and mapping, land use identification, etc.

Mary Ruth A. Bongon *(5th-year undergraduate student Department of Geodetic Engineering)*

"The rate of urbanization is increasing every year. And for every twenty years, people who live in the urban area is increasing by 10%. There are several reasons why people move in from rural to urban. More opportunities in the urban area, the technology is much better than in the rural, the decision-making and most of the programs of the government is more concentrated in the urban area. But because many people is concentrated in the urban areas, there is pollution everywhere and for developing countries, almost 1/3 of the urban population are slums. Even though the area is highly urbanized, we must still consider the environment. It must be green. And to achieve this one, we must plan and think on how to attain sustainable development."

Pathira Arachchilage Kalani Randima Lakshani *(Graduate student Department of Remote Sensing and GIS)*

"The population growth is very high in urban cities. Especially the growth of slums in mega cities causes lot of problems. So when the population is high the pollution becomes high then the vulnerability of the society to different phenomena like climate change automatically goes up. Education for everyone, policies, Giving more opportunities to women may provide timely solutions to these problems."

Fabio Kimura *(3rd-year undergraduate student English Language and Culture)*

"This lecture was very exciting for me. Now people are more moving to cities, and urban cities are with more population and problems. Japan is a developed country so we have enough transportation and kind of good environment. But other cities have traffic jam, pollution and other problems. I don't know how to apply to my future."

Geospatial and Space Technologies in International Development Projects

Conducted by: Dr. Hiroyuki Miyazaki, **Date:** 22 August 2016

The participants learned about the sustainable technological development. How to maintain enough resources and continue for a long time. There are three important parts: operator, data provider and buyer. Now, the Sentinel Asian project is the big project which provide the satellite data to community, when disaster is happening.

Phattamon Heawchaiyaphum *(4th-year undergraduate student Geographic Information System)*

"I learned about sustainable technology and Learn about research examples that has been used ABD. In future I will application this knowledge with my field."

Yugo Naito *(3rd-year undergraduate student Management/College of Business and Information Science)*

"GIS can prevent Ebola with cellphone. It was really surprised for me. GIS have a lot of likelihood. I am interested about GIS."

Paramjit Singh Bhambra *(Master student Geoinformatics)*

"In this lecture I learned about International development projects, how world has been working for their development projects and prof. showed us many case studies as well which help us to make relation among various researches. He also taught us Asian Development Bank (ABD) and their characteristics. If I get the opportunity to work in this area then I have the sufficient knowledge to work in this area because of this lecture."

Duong Thi Loi *(Doctoral student GIS research Centre, FCU)*

"This course provided for learner a lot of knowledge. Firstly, I am taught about sustainable technology and system. Secondly, this course introduces about how to finance the technology in practices through the specific case study. Thirdly, I learn the knowledge about a recent collaboration of GIS and RS in the Asian Development Bank. Finally, this course provides many applications of technology in practices such as urban planning, webgis, infrastructure, flood disaster and urban growth."

UAV demostration

Conducted by: Dr. Sarawut Ninsawat, **Date:** 24 August 2016

The participants learned about structure and design of UAV. Also, they learned about the configuration of the direction by sing remote sensing. They also obtained experience by demonstration of how to use UAV in order to capture the image in AIT.

Hinako Imae *(1st-year undergraduate student International Studies/College of International Studies)*

"This technology is very excited for me. We can research easy if we have it."

Chanpich Chea *(4th-year undergraduate student Department of Geo-resource and Geotechnical Engineering)*

"Drones are more formally known as unmanned aerial vehicles (UAV). Essentially, a drone is a flying robot. The aircraft may be remotely controlled or can fly autonomously through software-controlled flight plans in their embedded systems working in conjunction with GPS. It is very expansive so when we start to operate it, we should be careful doing step by step and everything with clear job. I can learn how to take off or land of Drone, I also see the first preparation before we take off our drop to mapping"

Phan Quoc Tran Kha *(Researcher GIS and remote sensing research center)*

"Today, I was tried with drone and It's interesting. With drone and camera, we can apply to monitoring in agriculture, land use, land cover. With this practice course, I knew how to control and apply drone. But it's too expensive so I think that is also a problem to apply popular."

Paramjit Singh Bhambra *(Master student Geoinformatics)*

"UAV was my 1st time real experience so it was very good. I learned that we can take photos as per our need to make our research more prominent. The controllers was very easy so thus it was very user friendly, it goes up to the height of 400 m but we can only fly up to 90 meters, which is also very good range to capture images."

Global Climate Change and Water Resources Management

Conducted by: Dr. Sangam Shrestha, **Date:** 24 August 2016

The participants learned about what the climate change in global is, 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.

Taichi Fujii *(Graduate student School of Bioscience and Biotechnology)*

"I learned about factors of various climate change other than greenhouse gases. And, I learned what happens if global temperatures increase in the future."

Duong Thi Loi *(Doctoral student GIS research Centre, FCU)*

"There are many contents mentioned in this course. Firstly, this course introduces about a current status of wastewater and FSM in Thailand. Secondly, I learn about a regulatory framework for DEWAT/FSM in Thailand and institutional set up of the sanitation sector. Lastly, the lecture mentions about issues and challenges of wastewater in countries in the world."

Chanpich Chea *(4th-year undergraduate student Department of Geo-resource and Geotechnical Engineering)*

"I knew clearly between Climate and Weathering. Climate change because of changes in sun's output, Earth's orbit, drifting continents, Volcano eruption, Greenhouse gases with many impacts. I knew about how to protect and prepare our-self to the climate change such as Structural Adaptation (include dams, weir, drainage canals, sea walls.) and Non-Structural Adaptation (include policies, legislation & enforcement, Insurance, Early warning system, etc.). And one more is Case study, it is very interested, "Assessment of climate change impacts on water availability and water transfer". After this class I will have one general knowledge of Climate change."

Suman Ghimire *(Master student Communication and Computer Technologies)*

"I gained an overview about the global driving factors of climate change and how those factors are inducing the greatest threat to mankind. Dr. Sangam Shrestha also described about the long term threats if the situation still prevails and described some of the sustainable approaches for tackling, adapting and mitigating such condition. He also explained about the sustainable approaches related to water conservation that are currently being practiced in developing countries around Asia which I will try to implement in my country."

Current Status of Wastewater and Fecal Sludge Management in Thailand

Conducted by: Dr. Thammarat Koottatep, **Date:** 24 August 2016

The participants learned about the current status of water and fecal sludge management (FSM) in Thailand also the factors affecting to FSM. Also, they learned about the recovery process through establishing FSM business in Thailand.

Phattamon Heawchaiyaphum *(4th-year undergraduate student Geographic Information System)*

"I learned about wastewater and fecal sludge management in Thailand. And have been watching a technology preview of interest. In future I will application this knowledge with my field."

Kanxa Javed *(Master student Department of meteorology)*

"Water is the imp thing we have to be worried from now because most of the cities will face this issue very seriously.so we have to develop technologies that we can recycle our water and can use its again and again. As Singapore is using it in cooling process."

Paramjit Singh Bhambra *(Master student Geoinformatics)*

"I learned about waste water problems which we are facing right now and this lecture was very helpful for me because prof. also gave many examples which my country India is facing right now and we can deal with that so yes it was very helpful me to get to know about all these. He also showed us all the latest technology on which his team was working, thus it was very good to know all these stuff and the latest technology about this."

Phan Quoc Tran Kha *(Researcher GIS and remote sensing research center)*

"In this course, I learn about what is the wastewater and fecal sludge. I knew that wastewater and fecal sludge are the big serious problem of many developing countries as Thailand, Vietnam, Philippine, Cambodia, Sri Lanka Then I learn about FSM in Thailand and management, policy points to treatment plant. That's valuable experience to apply at Vietnam. I was visited Lab where is have good ideas. This is a nice course."

8. Comments on Field Trip

PASCO (Thailand) Co., Ltd.

Date: 17 August 2016

PASCO (Thailand) Co., ltd. is the company offering a full range of professional services in Aerial Photography, Digital Photogrammetry & Mapping, Surveying and GIS, both in Thailand and internationally. With this program, the participants got a chance to observe line mapping, orthophoto and 3D map process sections.

Taichi Fujii *(Graduate student School of Bioscience and Biotechnology)*

"I learned Company Profile of Pasco, how to convert 3D map from 2D map and how to take advantage of 3D map. I can grasp the study site in detail by creating a 3D map. I thought my research width is spread by learning the 3D mapping technology. I was fun to be a simple experience of 3D mapping. I wanted a time that I can talk to the Japanese to work in the company."

Kanxa Javed *(Master student Department of meteorology)*

"Field trip to PASCO actually made thing crystal clear how they handle bug data or how it import to GIS or manually adding details. That step by step briefing about AutoCAD, ArcGIS or summit evolution was very helpful for understanding. It would help me when I'll start working on this in my country and what aspect I do have to focus while I'm mapping for some serious state purpose"

Duong Thi Loi *(Doctoral student GIS research Centre, FCU)*

"I have chance to know about the Pasco company formerly known as Thai Mapping Service Co., Ltd. This company has offered a full range of professional services in Aerial Photography, Digital Photogrammetry & Mapping, Surveying and GIS, both in Thailand and internationally. I also have chance to see the steps to create the digital data and map."

Chanpich Chea *(4th-year undergraduate student Department of Geo-resource and Geotechnical Engineering)*

"PASCO (Thailand), their work is mainly related to adjustment to ortho photo. And the recent project is in Thailand (Street view), it is more detail that google map. It will detail about the type of gate, building (concrete, wooden, etc.), advertisement, etc. There are using high technology software and equipment. The 3D plotting data set for 3D visualization and analysis."

National Disaster Warning Center (NDWC)

Date: 17 August 2016

National Disaster Warning Center – NWDC is an organ under Office of the Permanent Secretary, Ministry of Information and Communication Technology. NDWC has the main role to warn the disaster arising from multi natural hazard. With this program, the participants learned 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.

Mary Ruth A. Bongon *(5th-year undergraduate student Department of Geodetic Engineering)*

"What I've learned the most form NDWC is that every aspect of what they are doing is useless if the people in the community doesn't know to utilize it. The community must be taught how to respond in times of disaster and how they can utilize every resources they have, especially on how they can use maps for their safety. Remote Sensing and GIS are very vitals fields in the NDWC. RS and GIS is the key to disaster preparedness and mitigation."

Areeyaporn Sutthawong *(4th-year undergraduate student Geography)*

"I have learned that National disaster warning center is center which communication system quality real-time. It has controlled and ordered when event. There is work systematically and there is use primarily GIS system. In the future I think that it should to develop disaster warning application for smart phone."

Phan Quoc Tran Kha *(Researcher GIS and remote sensing research center)*

"With the aim of minimizing the damage caused by natural disasters, NDWC has been established to monitor and warn people when a disaster occurs, such as floods, earthquakes, forest fires. With the collaboration of many research centers in the world, NDWC will process information when detecting any unusual changes and quickly inform the countries of area. At NDWC, I learned how to get information of natural disasters and warning when there are natural disasters. That is a useful knowledge for me and everyone. ."

Thai-Danish Dairy Farm

Date: 21 August 2016

This farm is the beginning of the dairy farm in Thailand. The Danish government and the Danish Dairy Farming Association together offered a promotion project on the raising of dairy cows. They cooperated with the Thai government to establish the Thai-Danish Dairy Farm (TDDF) and a training centre in Muak Lek District, Saraburi.

Haruka Iesaki *(3rd-year undergraduate student Computer Science/College of Engineering)*

"I learned that the farm is the first farm in Thailand. It's very famous company. It was established by Thailand and Denmark. This company doesn't sell only milk."

Yugo Naito *(3rd-year undergraduate student Management/College of Business and Information Science)*

"We went to grape farm and cow farm. We ate grape in grape farm. We can eat grape with skin. It was really delicious. After grape farm, we went to cow farm. There are a lot of cow farms in Japan, but It was for the first time to go to cow farm. I learned about how to milk from cow and cow. Milking was really difficult. It was difference quantity from me to farmer to milk. I had a good day."

Paramjit Singh Bhambra *(Master student Geoinformatics)*

"here I experienced about the milk production of Thailand, here I learned about how to do milking we also feed the cows, it was very nice and then after we also ride a horse and saw cowboy performing the stunts, The guide showed us about their farms, that how everything has been grown, she only speaks Thai language but it was very nice to see many things."

Mary Ruth Bongon *(5th-year undergraduate student Department of Geodetic Engineering)*

"Thailand has a very diverse culture. And it has a lot of farms. Maybe agriculture is the main industry in Thailand. And the nature is not exploited. The government and the villagers as well value the importance of nature that's why they are protecting the nature. And I just observed that even in the province, Thailand has a good road and traffic system. It has a wide road. Unlike in the Philippines, the road are just 10-20m."

GISTDA Sriracha

Date: 23 August 2016

GISTDA is a public and core organization of Thailand. GISTDA was established on November 3, 2000. GISTDA is responsible for space all technology and geo-information activities. Today, GISTDA is developing a worldwide network of distributors to allow the users to use and access to all GISTDA products

Fabio Kimura *(3rd-year undergraduate student English Language and Culture)*

"They have a lot of satellites and use day every day for many things such as urban plan, agriculture, disasters and so on. I didn't know before how satellites are used so it was very interesting for me. They have to plan and give a command on the day before. They have to be very strict about that. The museum was very fun as well. I could have fun just like I am a kid."

Pathira Arachchilage Kalani Randima Lakshani *(Graduate student Department of Remote Sensing and GIS)*

"GISTDA is the leading agency to provide services for Geo spatial data based various academic services and research activities. It has mainly a Training center, Earth Observation Centre and Thaichote Control and Receiving station.
The polar orbiting satellite is every day at 9.00 in the morning.it is over Thailand. With the launch of the THEOS satellite, Thailand got the chance to access the SPOT and RADARSAT data"

Hinako Imae *(1st-year undergraduate student International Studies/College of International Studies)*

"I learned there are a lot of high technology in GISTDA and data from satellite is very important for us.
"

Phattamon Heawchaiyaphum *(4th-year undergraduate student Geographic Information System)*

"I learned about product of GISTDA , ThaiChote satellite , learn about The orbit of the satellite and have been watching the satellite reception etc. Visit Space Inspirium Space Museum, the first in Thailand. And do fun things such as watching movies in 3D, test Gyroscope and so on."

Ayutthaya Historical Park

Date: 25 August 2016

The Ayutthaya Historical Park covers the ruins of the old city of Ayutthaya, Thailand. With this program, the participants had a chance to visit the highlights such as Wat Phanan Choeng and Wat Ma Ha Tat which they could see the Buddha's head inside the tree. Also, they enjoyed with elephant at Ayutthaya floating market and learned Thai culture and architecture from the city in Ayutthaya.

Fabio Kimura *(3rd-year undergraduate student English Language and Culture)*

"I was very surprised knowing that existed a big city hundreds years ago, and a lot of people were living there. I felt that it's like Machupichu. We don't have things like that in Japan so it was very interesting for me."

Suman Ghimire *(Master student Communication and Computer Technologies)*

"Ayutthaya left a good impression on me. As I have a huge enthusiasm for history this place was really fit for me. I got to know about the war between Myanmar and Thailand which still have left it footprints on the site through it is burnt sites. The overall trip was really entertaining accompanied by wonderful people from different parts of the world."

Pathira Arachchilage Kalani Randima Lakshani *(Graduate student Department of Remote Sensing and GIS)*

"This was a great experience for me to see a proud history in one end of the world. There were so much of ruins of the old Ayutthaya city spreaded throughout a large area which was destroyed by Burmese. Most importantly there are ruins of Buddhist temples, statues and dagoba. The head of Buddha in Wat Mahathat was really an adorable experience for me as a Buddhist. So I think Thailand is a country with a proud history as Buddhists."

Hinako Imae *(1st-year undergraduate student International Studies/College of International Studies)*

"Ayurthaya was very big and beautiful. It was fun for me. I wanted to know depth of knowledge."

Energy Conservation Building

Date: 25 August 2016

Energy Conservation Building in Honor of His Majesty the King is the celebration on the King on Throne Project on occasion of the fifty year anniversary of His Majesty the King's coronation. The participants learned about the building design and construction adopted the advanced energy conservation technology by natural system of Thailand climatic weather and cooling environment.

Paramjit Singh Bhambra *(Master student Geoinformatics)*

"I get to know many new thing here as this building theme was energy conservation and we saw many new technology which helps to conserve energy. They also explained us the importance of energy and many wide variety of electronic appliance which they develop to conserve electricity and even they demonstrate each and every thing as well."

Duong Thi Loi *(Doctoral student GIS research Centre, FCU)*

"This is an exciting experience in my life. Because this is very new knowledge for me. However, It provides for me a lot of interesting knowledge and helps me to more understand about architect and design. I know how to save energy in building and my own house in the future."

Ryosei Narita *(3rd-year undergraduate student English Language and Culture)*

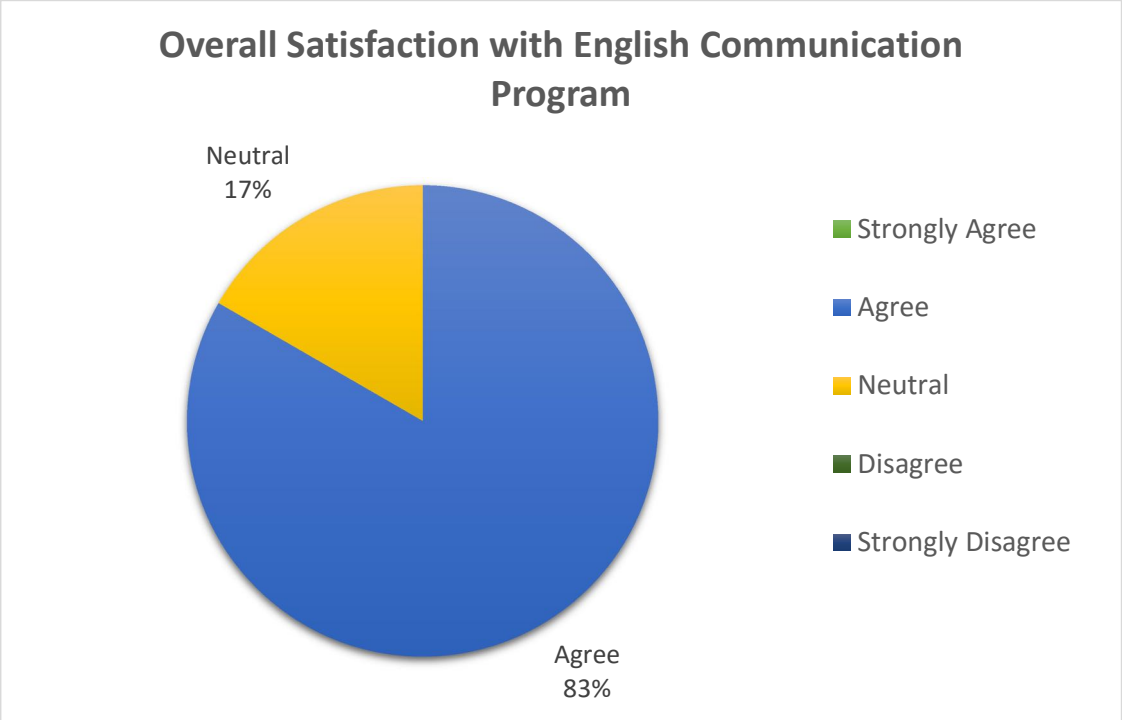
"Electric devices are used in our lives, and they must enrich our lives. They are applied to industry as well. We need to live with nature, so thinking about saving energy and living somehow is very important."

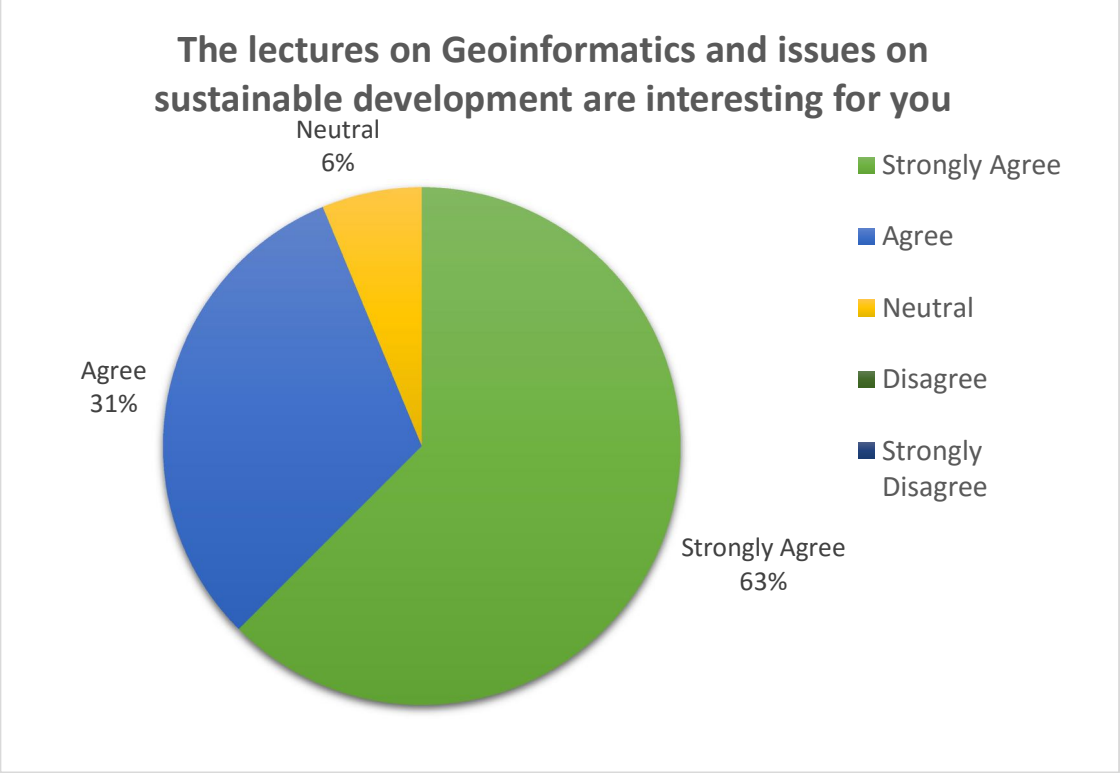
Chanpich Chea *(4th-year undergraduate student Department of Geo-resource and Geotechnical Engineering)*

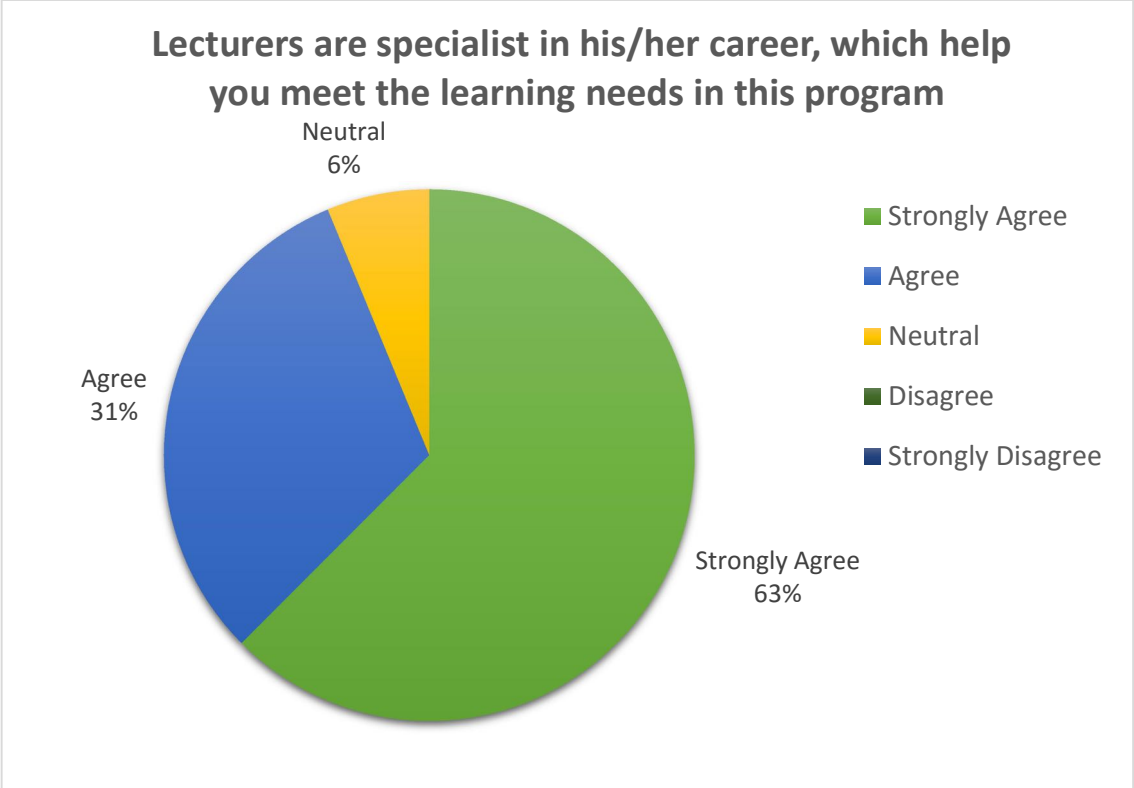
"When I arrive here, I was really strange of that building, There are many type of building such as Pyramid, triangle, etc. The design of building internal system and material selection that capably block the external heat and moisture, hence these minimize the building energy use by maintaining still the value and image of architecture."

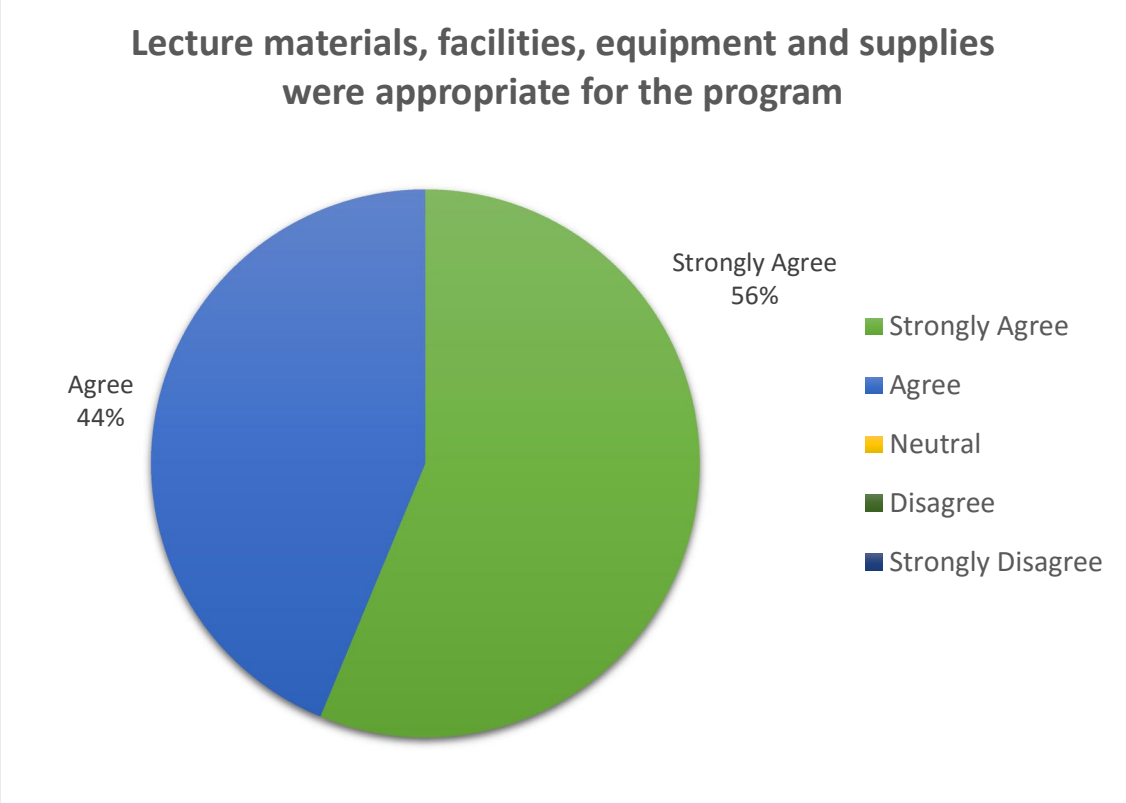
9. Program Evaluation

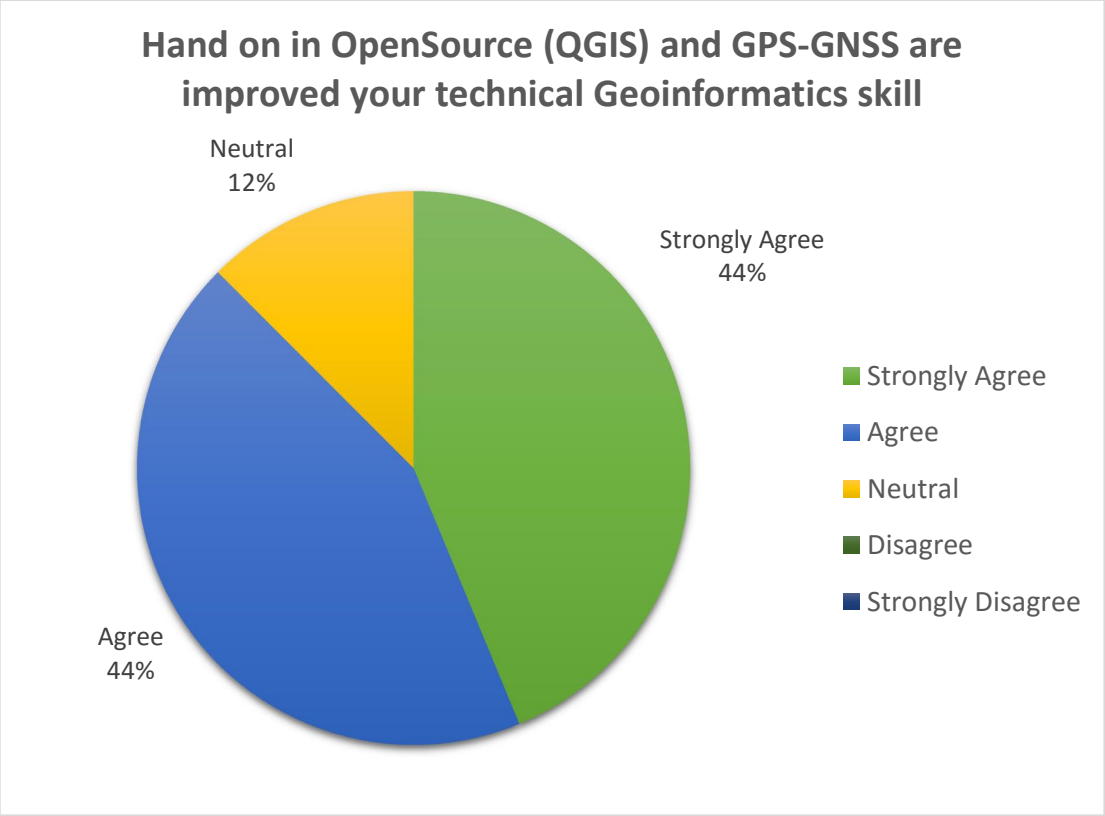
In this program, the evaluation forms were prepared for receiving feedbacks from participants in order to evaluate the program and identify weak point for improving further. The results from the first part are displayed as the pie charts below.

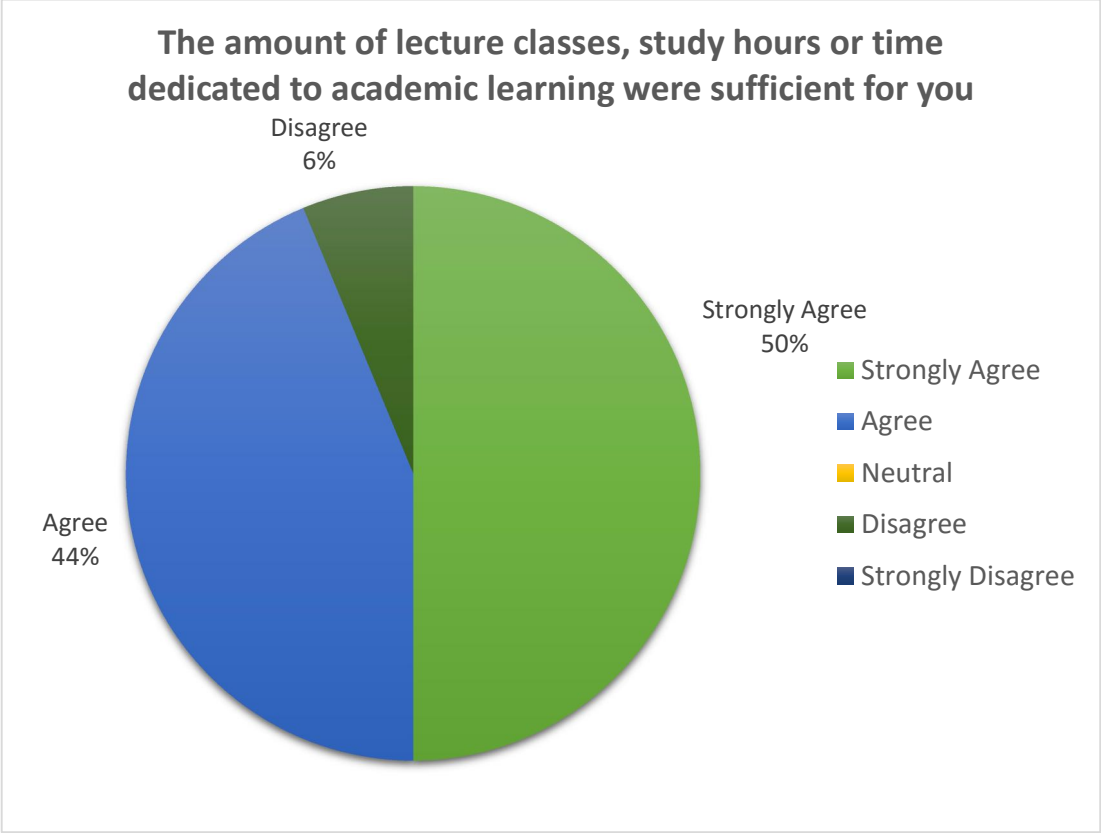


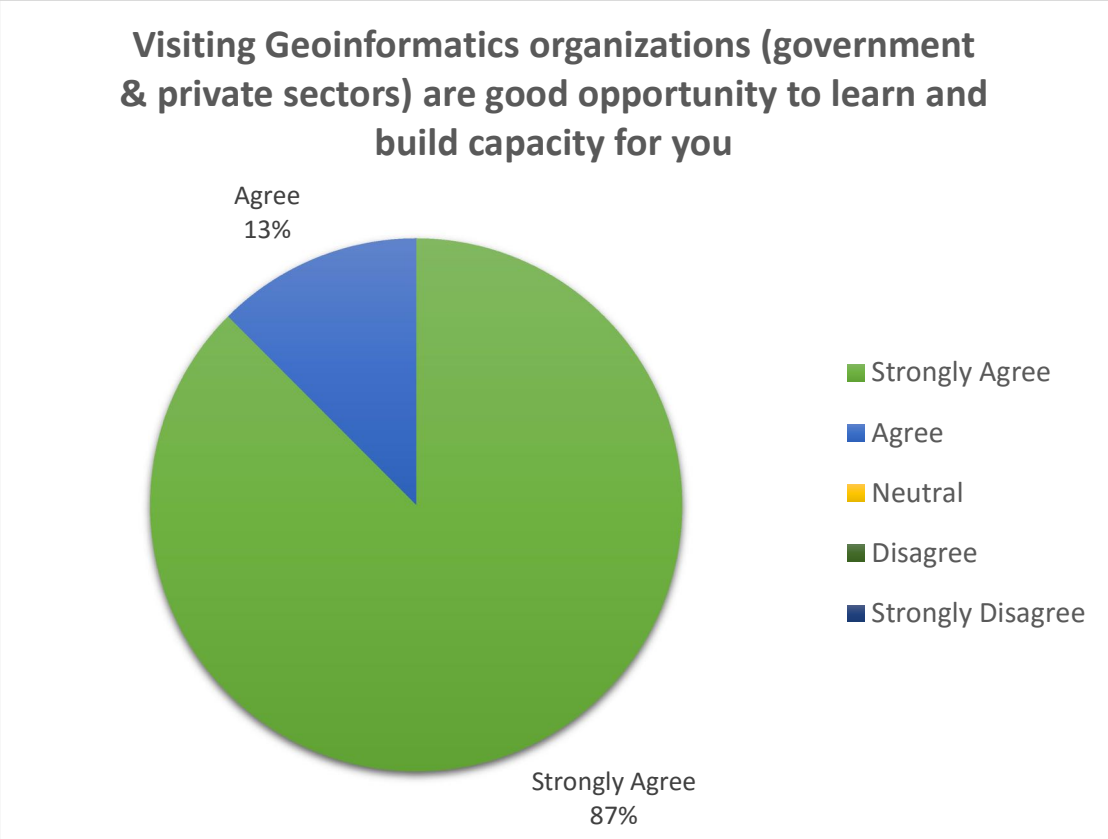


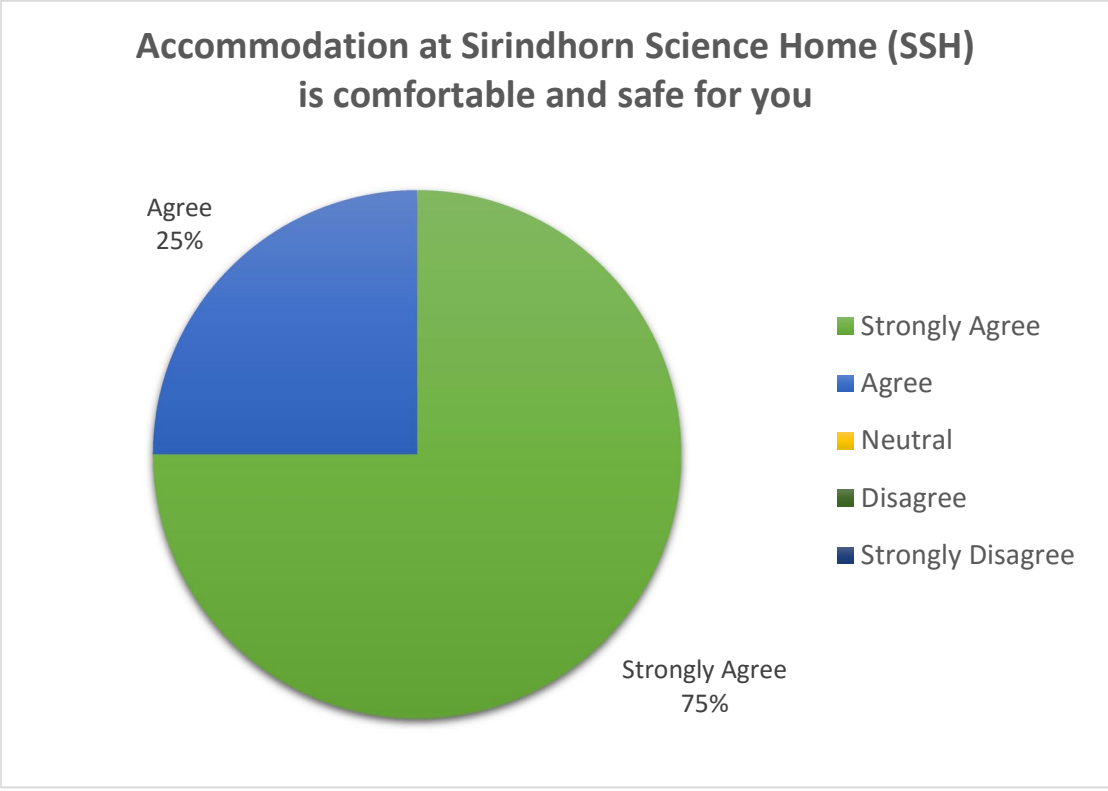

Lecturers are specialist in his/her career, which help you meet the learning needs in this program
Neutral 6%
Agree 31%
Strongly Agree 63%
Strongly Agree
Agree
Neutral
Disagree
Strongly Disagree

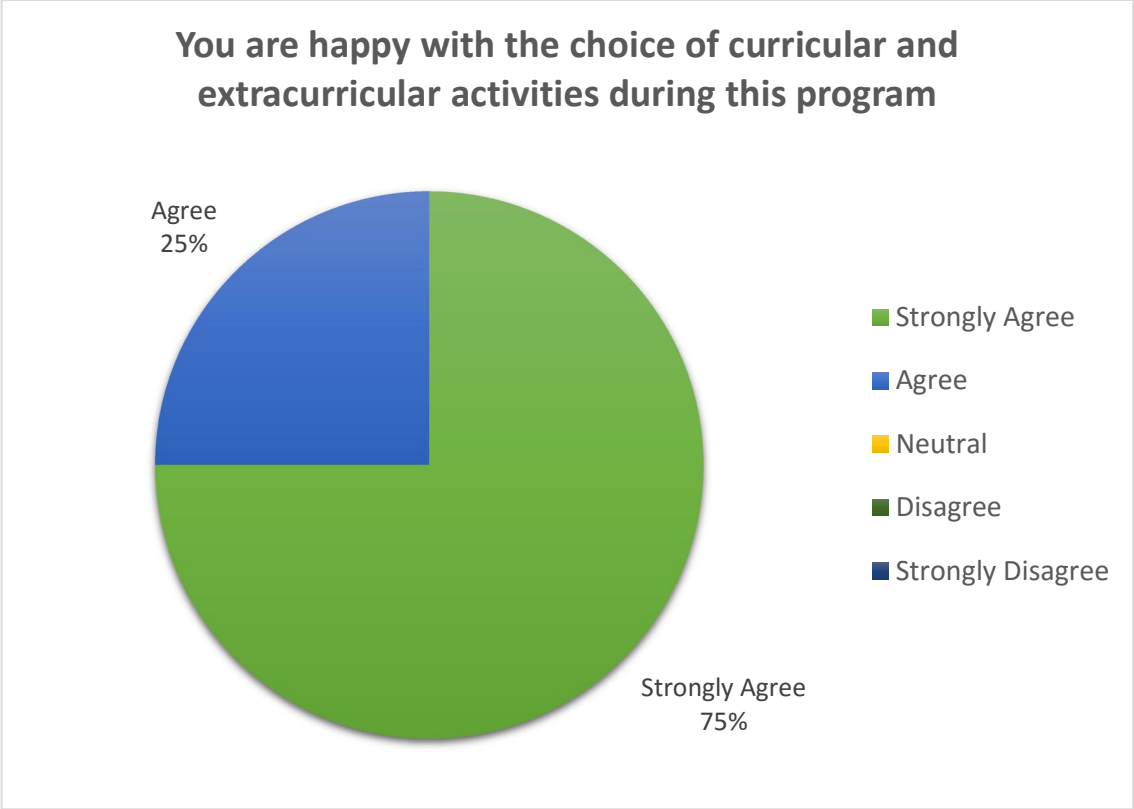

Lecture materials, facilities, equipment and supplies were appropriate for the program
Strongly Agree 56%
Agree 44%
Strongly Agree
Agree
Neutral
Disagree
Strongly Disagree

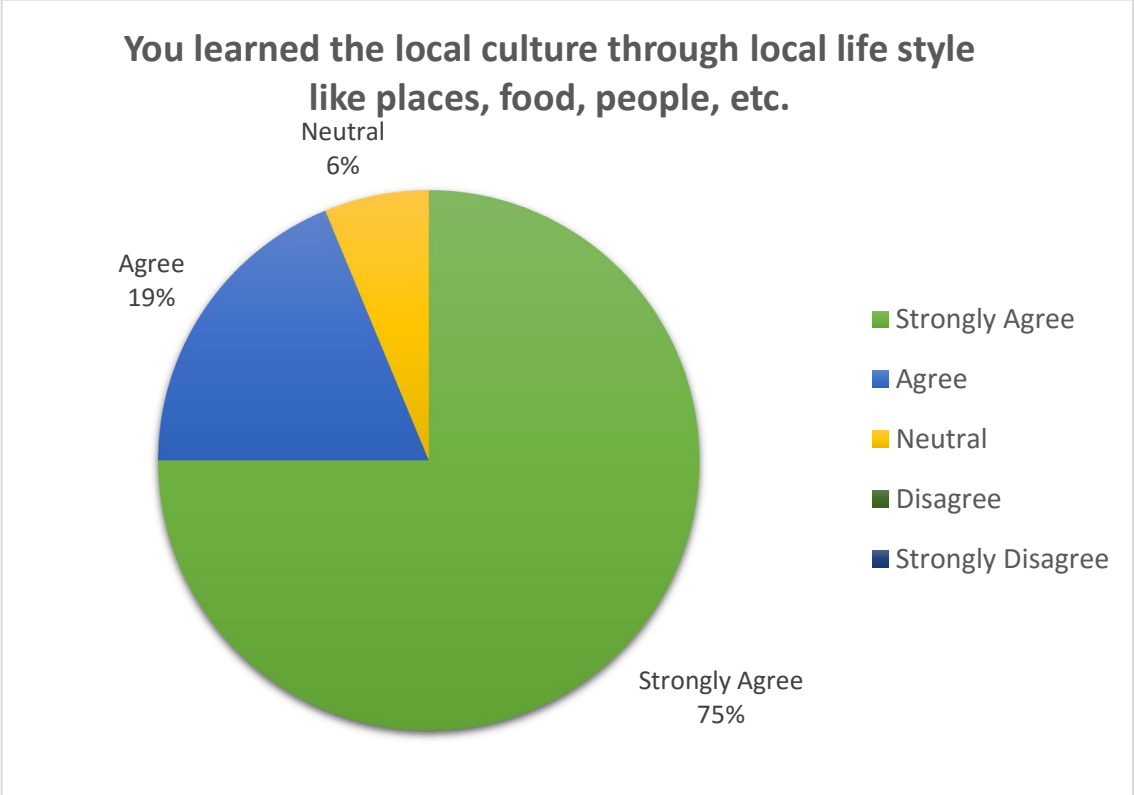

Hand on in OpenSource (QGIS) and GPS-GNSS are improved your technical Geoinformatics skill
Neutral 12%
Strongly Agree 44%
Agree 44%
Strongly Agree
Agree
Neutral
Disagree
Strongly Disagree

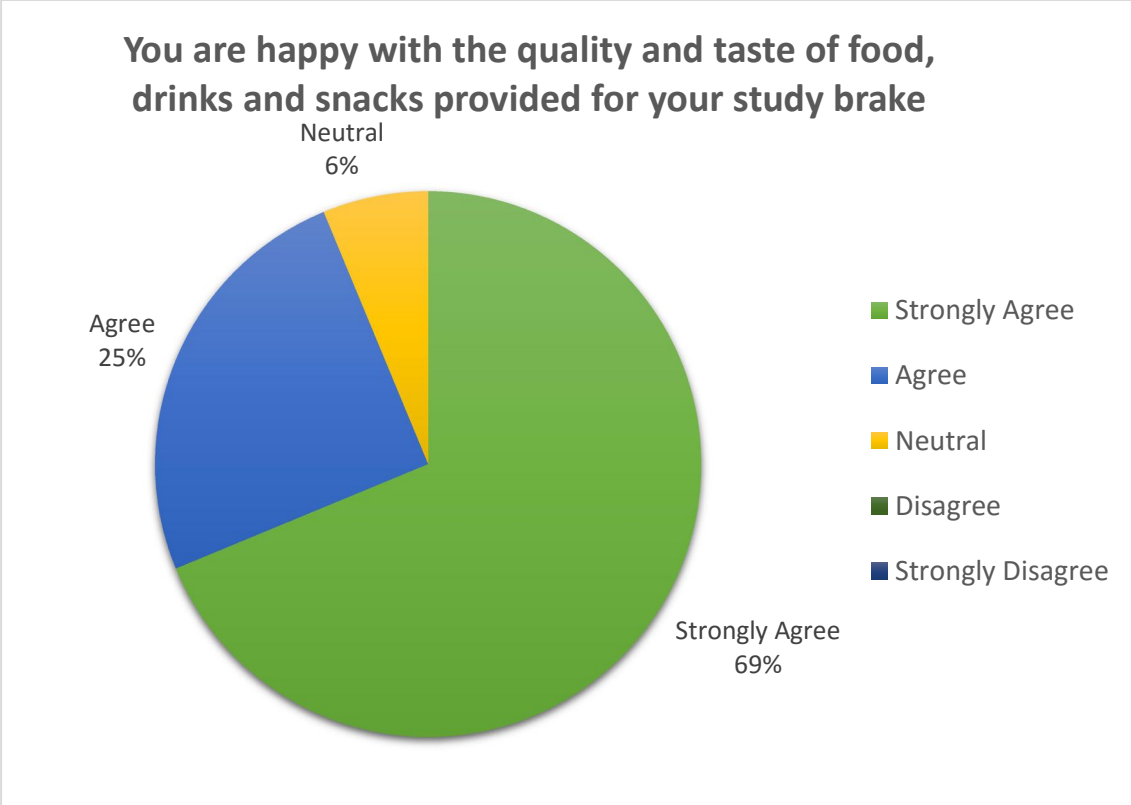

The amount of lecture classes, study hours or time dedicated to academic learning were sufficient for you
Disagree 6%
Strongly Agree 50%
Agree 44%
Strongly Agree
Agree
Neutral
Disagree
Strongly Disagree

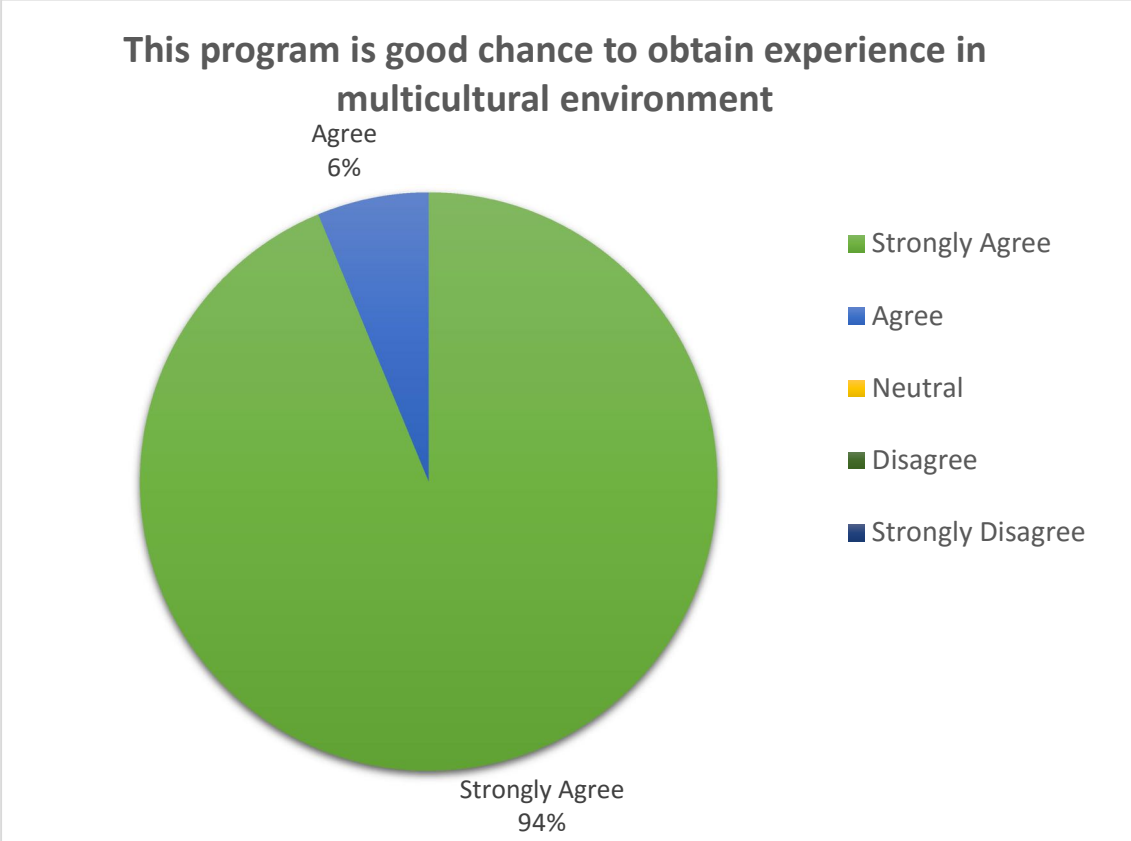

Visiting Geoinformatics organizations (government & private sectors) are good opportunity to learn and build capacity for you
Agree
13%
Strongly Agree
87%
Strongly Agree
Agree
Neutral
Disagree
Strongly Disagree

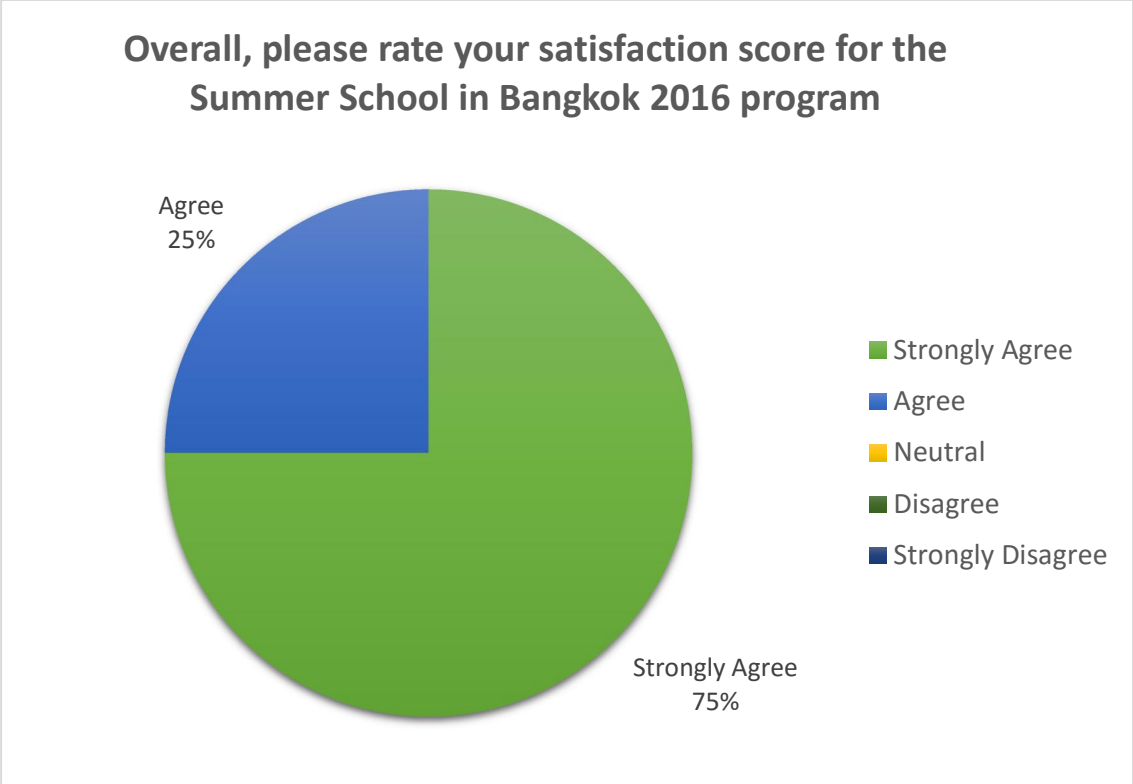

Accommodation at Sirindhorn Science Home (SSH) is comfortable and safe for you
Agree
25%
Strongly Agree
75%
Strongly Agree
Agree
Neutral
Disagree
Strongly Disagree

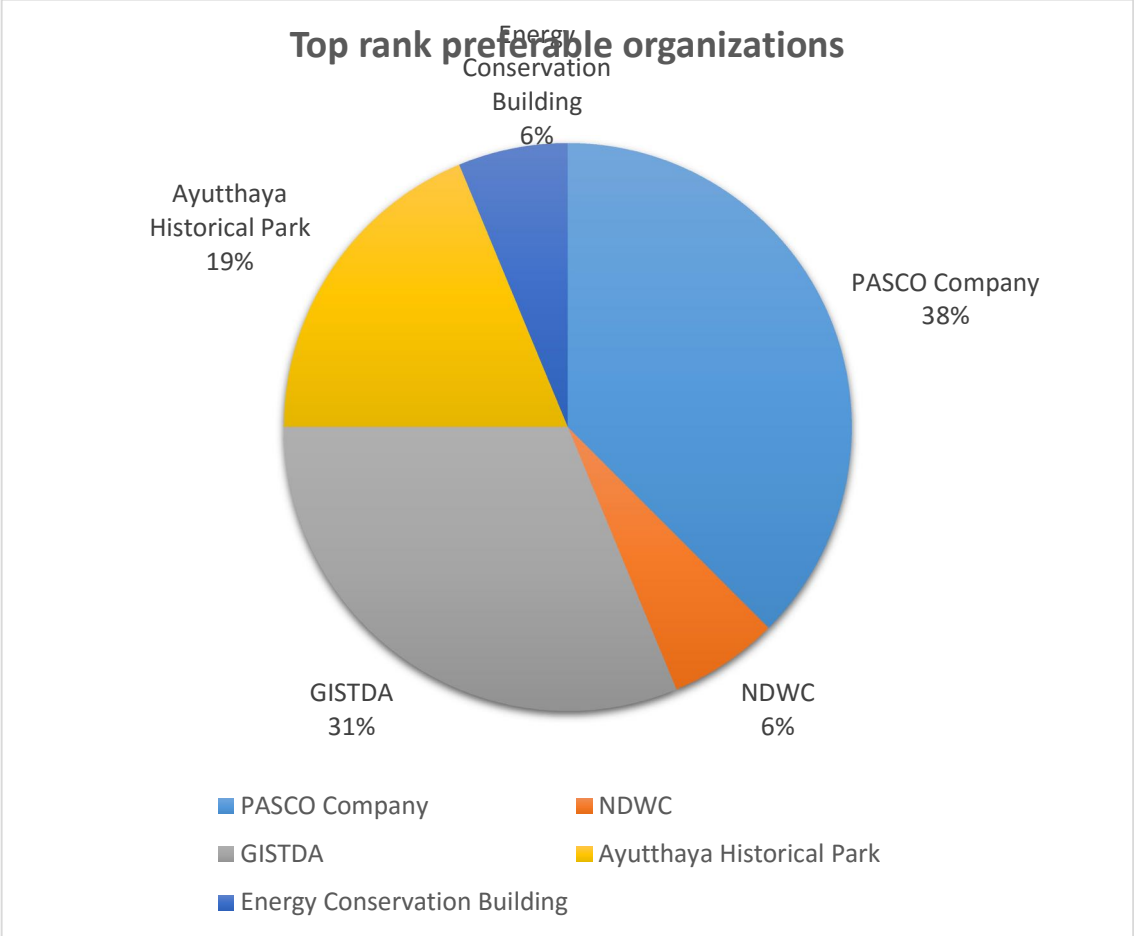

You are happy with the choice of curricular and extracurricular activities during this program
Agree
25%
Strongly Agree
75%
Strongly Agree
Agree
Neutral
Disagree
Strongly Disagree


You learned the local culture through local life style like places, food, people, etc.
Neutral
6%
Agree
19%
Strongly Agree
75%
Strongly Agree
Agree
Neutral
Disagree
Strongly Disagree


You are happy with the quality and taste of food, drinks and snacks provided for your study brake
Neutral 6%
Agree 25%
Strongly Agree 69%
Strongly Agree
Agree
Neutral
Disagree
Strongly Disagree


This program is good chance to obtain experience in multicultural environment
Agree 6%
Strongly Agree 94%
Strongly Agree
Agree
Neutral
Disagree
Strongly Disagree


Overall, please rate your satisfaction score for the Summer School in Bangkok 2016 program
Agree 25%
Strongly Agree 75%
Strongly Agree
Agree
Neutral
Disagree
Strongly Disagree


Top rank preferable organizations
Energy Conservation Building 6%
Ayutthaya Historical Park 19%
PASCO Company 38%
GISTDA 31%
NDWC 6%
PASCO Company
NDWC
GISTDA
Ayutthaya Historical Park
Energy Conservation Building

The second part shows suggestions from participants as follows.

- Thank you!! This summer school is one of my important experience.
- Thanks to Professor and financial support. Thanks to Mr. Tong & Ms. Kanokwan for take care us
- That program should be of a month and also have some off days so students can be fresh while they're learning.
- The summer school course provided for me the wonderful experiences. I love this course so much. I hope that I have more chance to join with this course in the next time.
- Every Thing was pretty good. Thank you very much for arranging this kind of valuable events for us. Thank you very much. Also forgive for any of my mistakes.
- I love this camp. Camp creating a great experiences and memories of my lives.
- Thanks for the great experience!
- I want say thank you so much for all. I love Thailand. I will come back Thailand with my family in next time. Cảm ơn về tất cả. Tôi yêu Thái Lan và con người nước bạn.
- Lecture in English was difficult. However, I got a lot of things. ASIAN summer school is so good.
- Thank you! I had many fun time!!
- I have to say thank you that I can get memorable knowledge and experience. And I love Thai food, so much even though my stomach was terrible with them. Tong and Whan, we couldn't do anything without the guys. They took care of us so much anytime. We have to payback for their hardworking for us. So Dr. Sarawut, please don't scold them too much. Plz.
- Thank you everyone for this wonderful opportunity. The summer school was a great success.
- I appreciate to have chance to study about GIS. I have interesting about GIS, and I want to study more GIS. Thank you, Wan and Tong. They took care of our grope every day. Thank you so much.
- Everything was very nice thank you so much for everything, I learned a lot about various culture and help to make many new best friends. We all were so close in this 2 weeks that most of the students had tears in their eyes at last moment, it was very nice. I learned a lot in this 2 weeks every prof were legends in their field and we all were very honored to listen them, in just 2 hours of every lecture they taught so many things, which will surely help me in the future. My best wishes is with this program, Thank you so much once again.

10. Conclusion and Recommendation

The Summer School in Bangkok 2016 Program was organized by the cooperation from AIT and Chubu University which it aims the participants to gain more experience and knowledge, especially in the issue of "Geoinformatics for Sustainable Development". Additionally, activities such as hands-on were provided for the participants who have the backgrounds on Geoinformatics to improve their technical skills for their career. Furthermore, under the international society, they could learn and exchange the different cultures via many Field Visit and activities such as Pizza Party and vacation at Muak Lek District, Saraburi to build a good relationship with each other.

Anyway, there is some suggestion from participants obtained from program evaluation. Mostly, participants gain knowledge, friendship and new experiences. Someone suggest to extend the program to a month. Someone request one day off for individual activities.

For accommodation and food, the participants were satisfied with accommodation since it was safe, convenient and surrounded by good environment. Moreover, the organizer tried to provide food for multicultural as much as possible. However, there were some participants who requested to eat only some certain food. Hence, to discuss about preferable types of food for individual participant should be done before starting the program.

For field visit, the participants also requested to visit some places such as Hua-Hin and other attractions in the center of Bangkok. Unfortunately, this year program was affected by unidentified explode event in Hua-Hin. In this case, we concern about the safe first, then the program had to cancel and changed the schedule leading the participants to miss an opportunity to visit Sirindhorn International Environment Park, Mangrove forest at Hua-Hin and other attractions. Furthermore, the program became more complicated to organize smoothly according to unstable schedule.

In during the programs, there are some student illness. For Japanese students, the cost of medical care is covered by health insurance. However, the other participants did not prepare it from their country. We force them to do endowment only, they need to pay for medical care.

In summary, the program achieved the main purpose that the participants could gain some experience and knowledge related to GIS for sustainable development. According to the evaluation, most of the participants were very satisfied with the program and from the assignment asked to submit, the participants could gave interesting answer with their deep understanding and inspiration from each lecture. Also, this program could successfully motivate the participants to gain more enthusiasm for exploring knowledge in RS-GIS and pursue higher education level in AIT or other universities. Most importantly, the program could build international relationship which will be expanded our RS-GIS network, and finally become strong connection which will support each other in the future.

Appendix 1: Program Photo Gallery

Opening Ceremony

15 August 2016

Lectures

15-26 August 2016

Relax Time: Pizza Party & Presentation

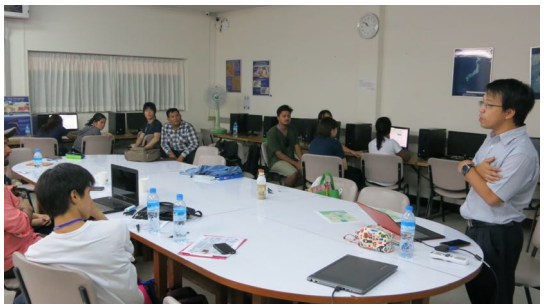
16 August 2016

PASCO (Thailand) Co., Ltd.

17 August 2016

National Disaster Warning Center (NWDC)

17 August 2016



Relax Time: Party with GIS & Remote Sensing Student

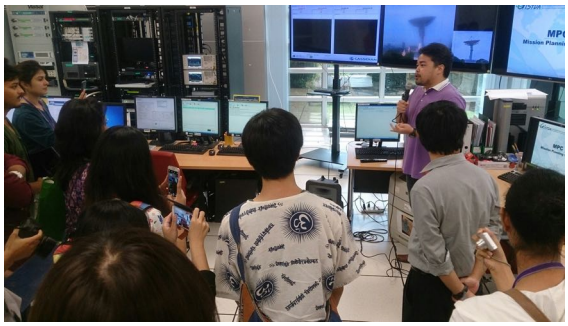
19 August 2016

Thai-Danish Dairy Farm

21 August 2016

Geo-Informatics and Space Technology Development Agency (GISTDA)

23 August 2016



UAV Demonstration

24 August 2016

Energy Conservation Building

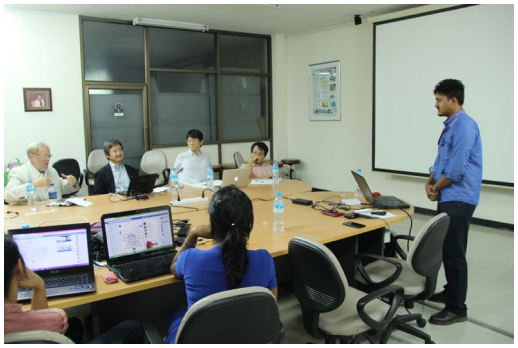
25 August 2016

Ayutthaya Historical Park

25 August 2016

Individual Presentation & Closing Ceremony

26 August 2016



Appendix 2: Questionnaire

Survey

Summer School in Bangkok 2016

Geoinformatics for Sustainable Development

15 – 26 August 2016

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. The lectures on Geoinformatics and issues on sustainable development are interesting for you	(5)	(4)	(3)	(2)	(1)
2. Lecturers are specialist in his/her career, which help you meet the learning needs in this program	(5)	(4)	(3)	(2)	(1)
3. Lecture materials, facilities, equipment and supplies were appropriate for the program	(5)	(4)	(3)	(2)	(1)
4. Hand on in OpenSource (QGIS) and GPS-GNSS are improved your technical Geoinformatics skill	(5)	(4)	(3)	(2)	(1)
5. The amount of lecture classes, study hours or time dedicated to academic learning were sufficient for you	(5)	(4)	(3)	(2)	(1)
6. Visiting Geoinformatics organizations (government & private sectors) are good opportunity to learn and build capacity for you	(5)	(4)	(3)	(2)	(1)
7. Accommodation at Sirindhorn Science Home (SSH) is comfortable and safe for you	(5)	(4)	(3)	(2)	(1)
8. You are happy with the choice of curricular and extracurricular activities during this program	(5)	(4)	(3)	(2)	(1)
9. You learned the local culture through local life style like places, food, people, etc.	(5)	(4)	(3)	(2)	(1)
10. You are happy with the quality and taste of food, drinks and snacks provided for your study brake	(5)	(4)	(3)	(2)	(1)
11. This program is good chance to obtain experience in multicultural environment.	(5)	(4)	(3)	(2)	(1)

	Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied
12. Overall, please rate your satisfaction score for the Summer School in Bangkok 2016 program	(5)	(4)	(3)	(2)	(1)

Please rank only top 3 of preferable organizations/ attractive places that you visited during the program in order of satisfaction, from 1 to 3, where 1 is the most preferable.

_____ PASCO company
_____ National Disaster Warning Center (NDWC)
_____ Thai-DANISH Dairy Farm
_____ GISTDA
_____ Energy Conservation Building at Klong5
_____ Ayutthaya Historical Park

Comment & Suggestion:

_____
_____
_____
_____
_____
_____

Thank you for your cooperation