

REPORT

Asian Summer School in Bangkok 2017

Geoinformatics for Sustainable Agriculture



21 August – 1 September 2017



Sponsors Support:

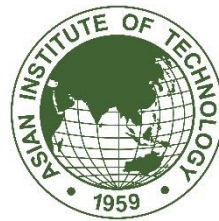
Visionary Value Japan Inc., Japan
(Prof. Shigeo Sakikawa)



Adin Research, Inc. Japan
(Dr. Koji Sasaki)



Chubu University



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 2017” program from August 21st to September 1st, 2017 at Asian Institute of Technology, Pathumthani, Thailand. The theme of the program was “Geoinformatics for Sustainable Agriculture”.

A total of 17 participants, 11 nationalities, came from 12 universities and organizations located in 10 different countries participated in this program. The average age of participant in the summer school are 24 years old. From Japan, six participants from Chubu University joined. Among participants from Japan, there are six undergraduate students (English language and Culture, Environmental Biology, Food and Nutritional Sciences and International Studies). For non-Chubu students, there are four graduated students: one Nepalese research assistants from Asian Institute of Technology (School of Environment, Resources and Development), one Omani researcher from Nature reserves department of Oman, one Pakistani master student from Institute of Space Technology (Remote Sensing and Geo-Information Systems) and one Vietnamese researcher from Ho Chi Minh City Institute of Resources Geography (GIS and Remote Sensing Research Center). There are seven undergraduate students: one Burmese student from Aung Sett Kyar Local Development Organization (Anglican Development Department), one Cambodian student from Institute of Technology of Cambodia (Department of Geo-resources and Geotechnical Engineering), one Filipino student from Bicol University College of Engineering (Department of Geodetic Engineering), one German student from Hochschule der Medien (Business Informatics and Digital Media) who is exchange student from International College UTCC Bangkok (Economic and IT), one Nepalese student from Kathmandu University School of Engineering/ Geomatics engineering, one Thai student from Srinakharinwirot University (Geography Department) and one Turkish student from Istanbul Technical University (Geomatics Engineering). The summary of participant is present in Table. 1.

Several lectures and field trips were conducted during the 12 days of this program. 11 lecturers are from different Fields of Study in AIT (Remote Sensing & GIS, Computer Science and Information Management, Agribusiness Management, Agricultural Systems and Engineering, Engineering and Water Engineering and Management). In addition, three external lecturers are from other organizations which is Michigan State University, Thailand's National Electronics and Computer Technology Center and Rambhaibarni Rajabhat University (UAV lecture). Moreover, five visits and field trips were conducted to connect what participants learned from lectures with the real world. Participants visited Geo-Informatics and Space Technology Development Agency (GISTDA), Kung Krabaen Bay Royal Development Study Center, The Golden Jubilee Museum of Agriculture Office, PASCO (Thailand) (Air Survey Company, Japan) and Bang Kra Chao. 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 Asian Summer School in Bangkok 2017 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 (Prof. Shigeo Sakikawa), and Dr. Koji Sasaki 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

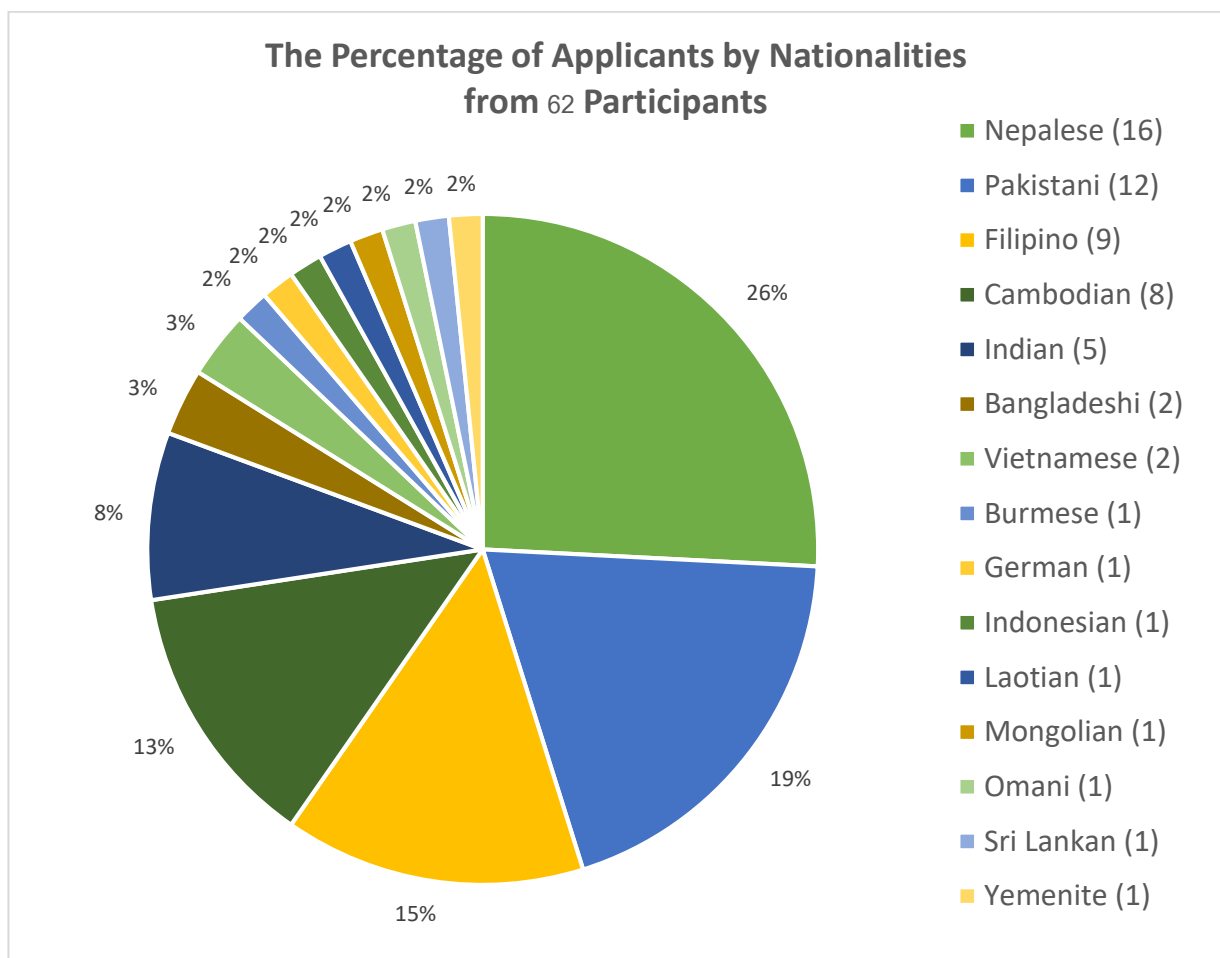
No.	Name	Age	Sex	Country	Grade	Field of study	University/Organization
1	Mamoru Sugimura	19	M	Japan	UG2	English Language and Culture/ College of Humanities	Chubu University
2	Masamitsu Kotone	20	M	Japan	UG3	Environmental Biology/College of Bioscience and Biotechnology	Chubu University
3	Misa Nishio	21	F	Japan	UG3	English Language and Culture/ College of Humanities	Chubu University
4	Shoki Kobayashi	21	M	Japan	UG3	English Language and Culture/ College of Humanities	Chubu University
5	Yoshino Suzuki	19	F	Japan	UG1	International Studies/College of International Studies	Chubu University
6	Yurina Kai	22	F	Japan	UG4	Food and Nutritional Sciences/College of Bioscience and Biotechnology	Chubu University
7	Prabhat Joshi	24	M	Nepal	Research Assistant	School of Environment, Resources and Development	Asian Institute of Technology
8	Salah Khalfan Ali Alsakiti	37	M	Oman	Graduated	Nature Reserves Department	Nature Reserves Department
9	Sumbul Jabbar	27	F	Pakistan	Master	Remote Sensing and Geo-Information Systems	Institute of Space Technology
10	Ho Lam Truong	25	M	Vietnam	Graduated	GIS and Remote Sensing Research Center	Ho Chi Minh City Institute of Resources Geography
11	Moses Badip Tawng La	23	M	Myanmar	UG4	Anglican Development Department	Aung Sett Kyar Local Development Organization
12	Meakh Sovanborey	21	M	Cambodia	UG4	Department of Geo-resources and Geotechnical Engineering	Institute of Technology of Cambodia
13	Sarra L. Maravilla	21	F	Philippines	UG5	Geodetic Engineering Department	Bicol University
14	Malte Grosse	31	M	Germany	UG4	Business Informatics and Digital Media	Hdm Stuttgart Germany, UTCC Bangkok
15	Nimisha Wagle	21	F	Nepal	UG4	School of Engineering/ Geomatics Engineering	Kathmandu University
16	Rungphet Singnawarat	22	F	Thailand	UG4	Geography Department	Srinakharinwirot University
17	Gizem Sacihan	24	F	Turkey	UG4	Geomatics Engineering	Istanbul Technical University

2. Purpose

The participants will learn issues what related to sustainable agriculture 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 be 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

There are totally 62 applicants from 15 countries who applied for Summer School in Bangkok 2017. The age of applicants ranges from 20 to 51 years old and most of them are 20-30 year old (50 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:



Asian Institute of
Technology



Aung Sett Kyar
Local
Development
Organization



Bicol University



Chubu University



HdM Stuttgart



Ho Chi Minh City
Institute
of Resources
Geography



Institute of Space
Technology



Institute of
technology
of Cambodia



Istanbul Technical
University



Kathmandu
University

Nature Reserves
Department

Oman



Srinakharinwirot
University

Countries:



Cambodia



Germany



Japan



Myanmar



Nepal



Oman



Pakistan



Philippines



Thailand



Turkey



Vietnam

Participants:

Chubu University



Mamoru Sugimura
(Japanese)

2nd-year undergraduate student
English Language and Culture

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Masamitsu Kotone
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Asian Institute of Technology



Prabhat Joshi
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Salah Khalfan Ali Alsakiti
(Omani)

Graduate student,
Nature Reserves Department

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Institute of Space Technology



Sumbul Jabbar
(Pakistani)

Master student
Remote Sensing and Geo-
Information System
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**Ho Chi Minh City Institute of
Resources Geography**



Ho Lam Truong
(Vietnamese)

Graduated student
Geographic GIS and Remote Sensing
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**Aung Sett Kyar Local
Development Organization**



Moses Badip Tawng La
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4th-year undergraduate student
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**Institute of Technology of
Cambodia**



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Srinakharinwirot University



Rungphet Singnawarat
(Thai)

4th-year undergraduate student
Geography
E-mail: badiptawngla@gmail.com

**Istanbul Technical
University**



Gizem Sacihan
(Turkish)

4th-year undergraduate student
Geomatics Engineering
E-mail: gizem.sacihan@gmail.com

5. Lecture Program

Date	Topic	Lecturer/Facilitator
14-20 Aug	RS-GIS Summer English Communication Program	AIT Language Center
	Ubiquitous Geoinformatics	Prof. Kiyoshi Honda
21 Aug	Agriculture GIS	Prof. Nitin Kumar Tripathi
	Global Climate Change Impact and Water Resource	Dr. Sangam Shrestha
	Mobile video processing platform for agricultural	Dr. Matthew N. Dailey
22 Aug	Aerospace and Satellite technology	Dr. Tai Nakamura
	Location Based Services and FOSS	Dr. Sarawut Ninsawat
	Linking Climate Information, Remote Sensing and Modeling for Decision Support in Agriculture	Dr. Amor V.M. Ines (online)
23 Aug	Sensors and Big Data for Society	Dr. Apichon Witayangkurn
	Agricultural Mechanization	Dr. Peeyush Soni
	UAV	Dr. Kumpee Teeravech
25 Aug	Hand on : UAV experiment in the field and processing	Dr. Kumpee Teeravech
	Interoperable Geospatial Data Platform for Smart Agriculture	Prof. Kiyoshi Honda
28 Aug	Geospatial Analysis using FOSS	Dr. Sarawut Ninsawat & Assistant
	Agribusiness Management: Global Perspective	Dr. John K. M. Kuwornu
29 Aug	Smart Farm Initiative in Thailand	Pisut Paiboonrat
	Alternative Future for a Ramsar Wetland: A case study from North East India	Dr.Chitrini Mozumder
30 Aug	GNSS lecture and Hands on	Dr. Sanit Arunpold

6. Field Trip Program

Date	Field Visiting
24 Aug	Geo-Informatics and Space Technology Development Agency (GISTDA)
26 Aug	Kung Krabaen Bay Royal Development Study Center
30 Aug	The Golden Jubilee Museum of Agriculture Office
31 Aug	PASCO (Thailand) Co., Ltd.
	Bang Krachao, Samut Prakan

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 2017										
	21	22	23	24	25	26	27	28	29	30	31
<i>Gizem Sacihan</i>	o	o	o	o	o	o	o	o	o	o	o
<i>Ho Lam Truong</i>	o	o	o	o	o	o	o	o	o	o	o
<i>Malte Grosse</i>	o	o	o	o	o	o	o	o	o	o	o
<i>Mamoru Sugimura</i>	o	o	o	o	o	o	o	o	o	o	o
<i>Masamitsu Kotone</i>	o	o	o	o	o	o	o	o	o	o	o
<i>Meakh Sovanborey</i>	o	o	o	o	o	o	o	o	o	o	o
<i>Misa Nishio</i>	o	o	o	o	o	o	o	o	o	o	o
<i>Moses Badip Tawng La</i>	o	o	o	o	o	o	o	o	o	o	o
<i>Nimisha Wagle</i>	o	o	o	o	o	o	o	o	o	o	o
<i>Prabhat Joshi</i>	o	o	o	o	o	o	o	o	o	o	o
<i>Rungphet Singnawarat</i>	o	o	o	o	o	o	o	o	o	o	o
<i>Salah Khalfan Ali Alsakiti</i>	o	o	o	o	o	o	o	o	o	o	o
<i>Sarra L. Maravilla</i>	o	o	o	o	o	o	o	o	o	o	o
<i>Shoki Kobayashi</i>	o	o	o	o	o	o	o	o	o	o	o
<i>Sumbul Jabbar</i>	o	o	o	o	o	o	o	o	o	o	o
<i>Yoshino Suzuki</i>	o	o	o	o	o	o	o	o	o	o	o
<i>Yurina Kai</i>	o	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.

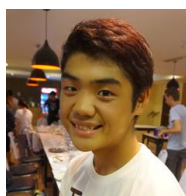
RS-GIS Summer English Communication Program

Conducted by: AIT Language Center, **Date:** 14-20 August 2017



The participants learned four skill of English language including listening, speaking, reading and writing. 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 introduced the participants to listening and presentation skills related to topics which conducted in our program such as Remote

sensing, GIS, Environmental problems, Climate Change and Global Warming. The lectures used many methods in the class such as group discussion, brainstorming, and presentation to help the participants communicate efficiently. Furthermore, the participants got chance to communicate with each other, interview foreigner students and presentation in English.



Masamitsu Kotone (*3rd-year undergraduate student, Environmental Biology*)

“I would like to improve my English and presentation skills from this class. Furthermore, we learned about type of environmental problems.”



Shoki Kobayashi (*3rd-year undergraduate student, English Language and Culture*)

“I learned some knowledges about international environmental issues. From this course, we also could study English to improve our skills.”



Misa Nishio (*3rd-year undergraduate student, English Language and Culture*)

“I want to improve my English skills before starting next class. The instructor is confused what I said. Therefore, I should improve my pronunciation. It was really good opportunity to learn about presentation skills.”



Yoshino Suzuki (*1st-year undergraduate student, International Studies*)

“I joined this class as I want to improve my English skills. Before I studied this course, I cannot present in public. In this course, I learned some ways to presentation. This is my important experience.”



Mamoru Sugimura (*2nd-year undergraduate student, English Language and Culture*)

“I joined this class to increase my English skills. I learned about speaking in English and I am satisfied with this course.”



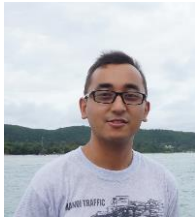
Yurina Kai (*4th-year undergraduate student, Food and Nutritional Sciences*)

“I decided to join this class for improving my English skill. In this course, I learnt how to presentation that is good for me.

Ubiquitous Geoinformatics

Conducted by: Prof. Kiyoshi Honda, **Date:** 21 August 2017

The participants learned that the ubiquitous geoinformatics mean the acquisition of the geospatial information by various applications anywhere and real-time. The topic includes satellite remote sensing, field sensor network, real time mapping, modeling and simulation, and high-performance computing. The satellite technology enables the near real-time information on Earth. Moreover, the lecturer introduces the utilization of high and low resolution satellite in several benefits. However, the technology that provide the real-time data is the field sensor network, compass camera and UAV.



Prabhat Joshi (*Research Assistant School of Environment, Resources and Development*)

“I learnt about various sectors in which geoinformatics and associated tools have been playing a part in getting meaning data for further processing. The ease with which improved data acquisition has been made possible has revolutionised the simulation of real-time geospatial data in agriculture, disaster, environment and socio-economic development as a whole. I plan to use this as guidance while modelling urban water systems while pursuing my Master's degree.”



Misa Nishio (*3rd-year undergraduate student, English Language and Culture*)

“I learned Ubiquitous Geoinformatics. It was my first time to learn about Geoinformatics. If all people can use GIS it will help them, because it doesn't have to acquire the data with from the airplane only. I think high school should provide the students to take GIS class as it is useful for their future.”



Gizem Sacihan (*4th-year undergraduate student, Geomatics Engineering*)

“I had chance to improve my knowledge about the sensor services and projects/applications. We got both technical and more application side info about the topics that were covered, which was really nice to have. It gave me new ideas and topics to do research when I get back to my country.”



Yoshino Suzuki (*1st-year undergraduate student, International Studies*)

“Most of the things I heard for the first time. But, I learned a lot of new system for future. For example, there are many earthquakes in Japan. Thus, I think that we can use Geoinformatics to know their effects and we know what should I do at first. And my uncle said that his farm doesn't use some new system. Thus, I think that these technologies should be introduced to him faster.”

Agriculture GIS

Conducted by: Prof. Nitin Kumar Tripathi, **Date:** 21 August 2017



The participants learned about the basic of Remote sensing and GIS. How to apply remote sensing and GIS in agriculture. Furthermore, the application of Remote sensing and GIS for agriculture in many case studies such as Locating Suitable Site for Cassava Plantation and Biofuel Industry in Sa Kaeo, Thailand, Land characterization for precision agriculture by downscaling of remote sensing and Monitoring agricultural drought using MODIS Temperature Vegetation Dryness Index in Mae Nam Chi

Basin, Thailand.



Prabhat Joshi (*Research Assistant School of Environment, Resources and Development*)

“I learnt about the history of remote sensing technology and its application in agriculture, particularly soil quality modelling. I found the concept of stochastic modelling (downscaling) very interesting and plan to use it for downscaling global climate models for a smaller region.”



Nimisha Wagle (*4th-year undergraduate student, Geomatics engineering*)

“I learn about how to use GIS and remote sensing in precision agriculture and I also learned about basics of GIS and Remote sensing. I have learnt to use remote sensing for better yield of crop and crop monitoring. I get knowledge about use of remote sensing agriculture through the project work done by professor's student. I will apply this knowledge in my thesis and project work. I am doing thesis on water quality monitoring and doing project on crop type mapping using Sentinel images. So, this course will help me to complete my thesis and as well as I will suggest everyone who is doing farming to use remote sensing technique in the farming for the better yield.”



Gizem Sacihan (*Undergraduate student Geomatics Engineering*)

“The analyze methods and comparisons were really useful to know. I will probably try to use those methods (soil salinity level analyzes for example) and see how it is working in the future.”



Misa Nishio (*3rd-year undergraduate student English Language and Culture*)

“I learned agriculture GIS from this course. We can use that for Japanese agriculture.”

Global Climate Change and Water Resources Management

Conducted by: Dr. Sangam Shrestha, Date: 21 August 2017

The participants learned about the water availability and water management challenges. Firstly, the lecturer tried to emphasize the participants about the current situation about the global water resources. Secondly, the observed and expected impact of climate change on water resources were presented. Thirdly, the lecturer shows the adaptation to climate change such as the seawater desalination plant or the reduction in water demand for irrigation. Finally, the case study about the assessment of climate change impacts on water availability and water transfer was highlighted to show the research on future climate scenarios.



Masamitsu Kotone (3rd-year undergraduate student, Environmental Biology)

“I learned about Climate Change and Water Resources. The global warming relates to sea level. Especially, sea level changing by the effect of global warming. It causes some creature move to other places, which change the local economy) and some seaweed can't make new generations.”



Rungphet Singnawarat (4th-year undergraduate student, Geography)

“I learned that climate change refers to any change of air that occurs due to internal and external processes, or caused by atmospheric or terrestrial changes that come from human activities. It can be applied to government policy planning about climate change issues.”



Meakh Sovanborey (4th-year undergraduate student, Department of Ge-resource and Geotechnical Engineering)

“I really learned a lot from Dr.Sangam Shrestha's lecture since it is something we familiar with. I got to know about the actual meaning of climate change and the causes as well as it's affection to the world both in a good way or bad way. Moreover, I learned about the overview relates to water resource such as the amount and its consumption from the world as well as the relationship between climate change and water resource. However, since we know the bad side of climate change that will affect humanity and ecology system, this is the time we should find the countermeasure and spreading to the whole world through media or education, and of course I will be one as well who will share this information to my country.”



Shoki Kobayashi (3rd-year undergraduate student, English Language and Culture)

“I learned water resources and climate change. The things I learned in this lecture gave me big topics that are going to be topic of my research.”

Mobile video processing platform for agricultural

Conducted by: Dr. Matthew N. Dailey, Date: 22 August 2017

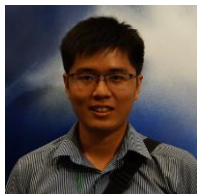


The participants learned about image processing in the context of Vision Systems. The useful of image processing in all phases of agriculture, image processing in pre-harvest applications, the chromatic restoration of an image, mobile robot in agriculture, 2D mapping with laser range finders, mobile video processing for agricultural crop mapping, 3D geometry and pinhole cameras, Mapping with stereo vision and occupancy grids and 3D modeling with time of flight cameras.



Salah Khalfan Ali Alsakiti (*Graduate student, Nature Reserves Department*)

“He give us a new insight about using camera in monitoring with examples in crop monitoring. These technologies will save time and money.”



Ho Lam Truong (*Graduate student, Geographic GIS and Remote Sensing Research Center*)

“I learn something about vision system, it have a lot of applications. Especially, the application of vision system in agricultural is very helpful. Dr. Matthew N. Dailey introduced us a Library for Support Vector Machines (<https://www.csie.ntu.edu.tw/~cjlin/libsvm/>). It is very interesting to me. I will try to learn about it after returning home. I think it is very useful for our research on agricultural information systems”



Sarra L. Maravilla (*5th-year undergraduate student, Geodetic Engineering*)

“I've learned that we can create a 3D geometry model for a plant through video sequences and can be used in many application. I'm thinking of developing an app that would give an automatic 3D model of a certain plant by applying close range photogrammetry.”



Meakh Sovanborey (*4th-year undergraduate student, Department of Geo-resource and Geotechnical Engineering*)

“I did learn a lot through this course such as the usages of vision system, how to use SIFT to visualize the texture modeling of objects and use SVM to classify the different objects by giving an maximum margin between those object (ex: classify/categorize between leaf and fruit). In agriculture, if both SIFT and SVM success we can do the mapping which can give us lots of information like how many plant we have or lose or how matured they are, and even how many work or problems we will have to deal with. If possible, in the future I want to use video processing combine with UAV for monitoring purpose by obtaining necessary information even agriculture or others.”

Aerospace and Human Space Technology

Conducted by: Prof. Tai Nakamura, Date: 22 August 2017



This lecture separated into two main sections which are “Aerospace and Human Space” and “Human Space Technology”. The objectives of the space engineering development are to go to outer space, to utilize resources in space, to build infrastructures in space and to develop new technology. In the second part, the scientific researches in space were presented to give the general information about the Japanese experiments on the international space station.



Sumbul Jabbar (*Master student, Remote Sensing and Geo-Information System*)

“The lecture was interesting till the end. I have learned a lot about What space engineering is and how it works. Moreover, I can understand the system engineering and management behind space crafts, working of space stations, space garbage, different steps of air crafts and how it works.”



Salah Khalfan Ali Alsakiti (*Graduate student, Nature Reserves Department*)

“The lecturer introduces us about airspace terminology and characteristics of space environment. We learn about how much efforts is prepared to have successful trip in space. In addition, the lecturer mentioned about some experiments done in space.”



Mamoru Sugimura (*2nd-year undergraduate student, English Language and Culture*)

“Humans are attracting in space and I will apply it for watching sci-fi movies.”



Moses Badip Tawng La (*4th-year undergraduate student, Anglican Development Department*)

“I learned about the aerospace technology and human space technology in our environment and around the earth. Different kinds of satellites are launch from the earth and positioned at the ISS in the galaxy.”



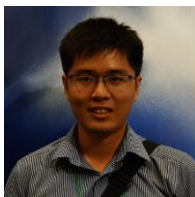
Yurina Kai (*4th-year undergraduate student, Food and Nutritional Sciences*)

“I am interested in space debris especially.”

Location Based Services and FOSS

Conducted by: Dr. Sarawut Ninsawat, Date: 22 August 2017

The participants learned about Location Based Service, Augmented reality and Virtual reality, how to apply Geoinformatics data to the Open Geospatial Consortium (OGC) web service, web GIS, software development efforts, online data archives and applications.



Ho Lam Truong (*Graduate student, Geographic GIS and Remote Sensing Research Center*)

“Location-based services (LBS) is a great combination of GIS, the Internet and mobile devices. With the development of cloud computing technology and the rise of the number of mobile devices, LBS will have a lot of potential to create useful applications for humans. I am very interested in the application LBS and AR in agriculture field data collection. Farmer or researcher can afford for data collection process with mobile devices. This gives me ideas to develop some applications for farmers in the Mekong Delta, Vietnam.”



Rungphet Singnawarat (*4th-year undergraduate student, Geography*)

“I learned about geographical location services. By using portable devices such as mobile phones, PDAs or devices. Through the network of service providers. Location Services It requires specialized equipment to connect to satellites such as GPS receivers. However, the popularity of LBS and wireless communications has increased to this day. Location Based Service (LBS) is a technology-based service. Wireless allows individuals or organizations to accurately pinpoint the location of a wireless device user. And learned about the new technology is AR which is very interesting for me. And I think it can be applied in many ways. It is suitable for living in modern times and the future is modern, convenient and fast.”



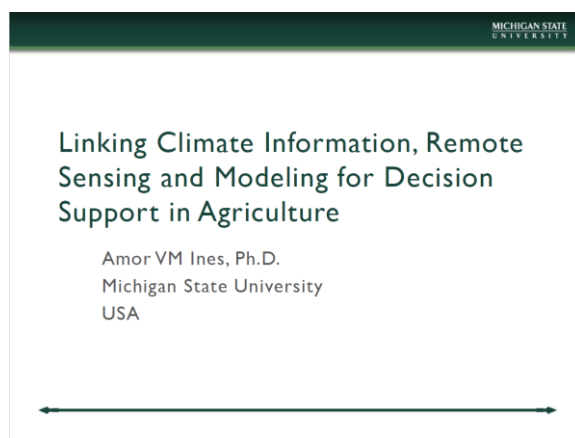
Nimisha Wagle (*4th-year undergraduate student, Geomatics engineering*)

“I learned many things from this lecture. I learned working principle of location based service. Different application of location based service and learned about Augmented reality and virtual reality. I learned about how augmented reality can be used to solve the real-life problem and how can things be made easier. I will use the learning from this lecture in my future work. as well as I will use the location based services in my daily work to make it easier”

Linking Climate Information, Remote Sensing and Modeling for Decision Support in Agriculture

Conducted by: Dr. Amor V.M. Ines (online), Date: 23 August 2017

From this course, the participants learned about the linking of the climate information to develop the model for supporting in Agriculture. Firstly, the topic about the climate risk management is presented. Secondly, this management can help in the decision in both of local and regional scale. The decision at the local scale is farmers' decision analysis such as risk index for planning optimal supplementary irrigation in dryland agriculture. On the other hand, the decision at the regional scale is the food security such as Philippines crop yield prediction. Finally, the topic is the improving information for decision support that can increase the lead time and accuracy for decision support.



Malte Grosse (*4th-year undergraduate student, Business Informatics and Digital Media*)

“Interesting research papers about El Nino and the effects on agriculture. Interesting was the huge variety of public accessible data - will use this in near future for some side projects.”



Yurina Kai (*4th-year undergraduate student, Food and Nutritional Sciences*)

“I've learned that decision analysis is important for both small-holder agriculture and larger-scale farmers. For improving the decision support, geoinformatics is a useful tool in improving the decision support, geoinformatics is a useful tool. And also I've learned some current cause study related to decision analysis for agriculture.”



Moses Badip Tawng La (*4th-year undergraduate student, Anglican Development Department*)

“I'd learned about the remote sensing, climate information and modeling for decision support in agriculture. Fertilizer management and also water stress of plant.”



Sumbul Jabbar (*Master student, Remote Sensing and Geo-Information System*)

“I learnt about climate change, effect of its change on fertilizers and risk management considering the factors. I will apply it to analyze the crops growth with the climate change.”

Sensors and Big Data for Society

Conducted by: Dr. Apichon Witayangkurn, Date: 23 August 2017

The participants learned about the different of data, information and knowledge. Also, they learned about big data including meaning, characteristics (i.e. Volume, Variety, Velocity and Veracity), development and services & infrastructures. Moreover, the case studies and applications such as Mobile phone as Human sensors and Emergency Evacuation.



Shoki Kobayashi (3rd-year undergraduate student, English Language and Culture)

“I learned about big data and current uses of it. I had really nice time to hear recent information which is useful in the future”



Gizem Sacihan (4th-year undergraduate student, Geomatics Engineering)

“I had chance to have some further knowledge and idea about big data. It will help me to come up with new ideas on terms of data collection or new projects.”



Sarra L. Maravilla (5th-year undergraduate student, Geodetic Engineering)

“I have learned the difference between data, information and knowledge. Data is the raw data represented by things and events, while information is the data that has been processed to make it meaningful and lastly knowledge is the information plus decision parameters. I have also learned that Facebook data and other social networking data like twitter and Instagram is a form of big data and that it needs a larger capacity other than the current computing system today. Moreover, big data has 4 Vs, Volume (data is increasing exponentially), Variety (different types of data), Velocity (data should be processed fast) and Veracity (incomplete data).”



Sumbul Jabbar (Master student, Remote Sensing and Geo-Information System)

“I learned about the concept of big data and its use. Difference between database and big data applications. Got to know different applications that are using big data. I will apply it to develop some application using big data.”



Mamoru Sugimura (2nd-year undergraduate student, English Language and Culture)

“I have learned sensors and big data. So, I will apply it for my future.”

Agricultural Mechanization

Conducted by: Dr. Peeyush Soni, Date: 23 August 2017

The main topic of the lecture is about the mechanized agriculture and sustainability in Asia-Pacific region: issues and challenge. First of all, the lecturer presented the global context and world food security. Then, the mechanized agriculture is the one of important thing to increase agricultural production. Then, the sustainable agriculture is presented which have three elements that are people, profit and planet.



Meakh Sovanborey (4th-year undergraduate student, Department of Geo-resource and Geotechnical Engineering)

“I get to know about the concept of Sustainable Agriculture, an importance ideal relate to agriculture, which will be an effective countermeasure to food management problem in the future due to the increasing of the world population. The concept of Sustainable Agriculture is to increase productivity, labor, profit etc. using Human+Machine (= Mechanical Agriculture) as well as decreasing the impact to environment. In this case, Agricultural Mechanization will take an importance role in Sustainable Agriculture by not increasing the size of machine used in agriculture, but use the technology application to adapt convenience and affordable tools for everyone. Nowadays, we are standing very far from Sustainable Agriculture, for achieving this ideal we have to start from now and education and advertisement will come first, then put them into practice accompany by contribution from every fields relate to agriculture.”



Misa Nishio (3rd-year undergraduate student, English Language and Culture)

“I learned Agricultural Mechanization. It is the issue about growing population, which is hunger and malnutrition. However, we are in less than half of the productive. Fifty percent increase in world population by 2050 while we have little new land to bring into production. Agricultural development in the AP region. Asian economic are undergoing in major transformation phase.”



Rungphet Singnawarat (4th-year undergraduate student, Geography)

“I learned about the Mechanised agriculture is the process of using agricultural machinery to mechanize the work of agriculture, greatly increasing farm worker productivity. In modern times, powered machinery has replaced many farm jobs formerly carried out by manual labour or by working animals such as oxen, horses and mules. Mechanisation was one of the large factors responsible for urbanisation and industrial economies. Besides improving production efficiency, mechanisation encourages large scale production and sometimes can improve the quality of farm produce. On the other hand, it can displace unskilled farm labour and can cause environmental degradation (such as pollution, deforestation, and soil erosion), especially if it is applied shortsightedly rather than holistically.

UAV lecture and Hand on : UAV experiment in the field and processing

Conducted by: Dr. Kumpee Teeravech, Date: 25 August 2017



The UAV lecture was conducted at Rambhai Barni Rajabhat University, Chanthaburi. The UAV lecture separate into three sessions. Firstly, the lecturers presented the definition of UAV and the its components, which are platform and sensor. Secondly, the lecturer showed the UAV flight by the field experiment that using the DIY UAV to capture the image inside the university. Moreover, the participants learned about the use of “Mission Planner” which is the open source application for flight planning. Finally, the

lecturers taught the participants to use “Agisoft photoscan” for processing the UAV image to be 3D model.



Sumbul Jabbar (*Master student, Remote Sensing and Geo-Information System*)

“About UAV, its components, working and how it is being utilized in agriculture sector, and processing of its collected data. I can use this knowledge to produce different analysis regarding agriculture and other sectors.”



Sarra L. Maravilla (*5th-year undergraduate student, Geodetic Engineering*)

“I have learned the components of UAV (Unmanned Aerial Vehicle) namely, platform (the vehicle type for the sensors like fixed wing, and multi-rotors, etc.), positioning sensors (Inertial Measurement Unit which includes gyroscope and accelerometer), measurement sensors (commercial cameras), main controller (APM or A2), data link telemetry for connecting the controller to the UAV and lastly the ground control system. I have also learned that the term drone is the nickname for the UAV. And also, the 4 steps in Structure from Motion (SfM), the feature detection, feature reconstruction, sparse reconstruction and dense reconstruction. We have done those 4 steps during the hands-on.”



Gizem Sacihan (*4th-year undergraduate student, Geomatics Engineering*)

“I learned more about UAV and 3d modelling. It will be very useful for me because I will be working on aerial photographs and 3d modelling next semester in my internship”



Prabhat Joshi (*Research Assistant School of Environment, Resources and Development*)

“I learnt about the fundamentals of UAV including its components and applications. Most importantly, I learnt about the 3D model construction from digital surface models (DSM). I have long been interested in this topic, and I hope to use this knowledge to bring 3D models of various watersheds to simulate hydrologic and hydraulic features during my studies and career in the near future.”

Interoperable Geospatial Data Platform for Smart Agriculture

Conducted by: Prof. Kiyoshi Honda, Date: 28 August 2017

From this course, the participants learned the importance of using geospatial data as the need of precision farming for higher productivity. Moreover, the impact of climate change also the one challenge for smart agriculture. The lecturer also demonstrated the topic about Agriculture 4.0 which have the objective to change mass production to lean production. Finally, the future of smart agriculture was emphasized to participants which are vertical integration to horizontal integration. Moreover, the sensors will be the important components that can help for smart agriculture.



Malte Grosse (4th-year undergraduate student, Business Informatics and Digital Media)

“I really like the idea to establish an international API. different file/data formats causing a lot of issues, especially in the sensor environment.”



Misa Nishio (3rd-year undergraduate student, English Language and Culture)

“I learned Interoperable Geospatial Data Platform for Smart Agriculture. Growing population, increasing demand and living standard, however, we have limited Land development and irrigation infrastructure, these are need of precision farming for higher productivity. Impacting crop growth, extreme event, need of adaption, risk assessment and scenario are climate change variability. He said no technology to predict for several months. vertical Integration to Horizontal integration, interoperable information platform, these are future things.”



Sarra L. Maravilla (5th-year undergraduate student, Geodetic Engineering)

“I have learned that precision farming using ICT is really a need for higher crop productivity. And because of climate change which directly influences agriculture, we need to perform scenario simulation to be able to know what will happen in the future given by a set of parameters. And I will apply my learning from this course in my future research study.”



Yoshino Suzuki (1st-year undergraduate student, International Studies)

“I learned about some system. Many young generation can use this system and more effectively. Even if it's difficult for me to understand this system. However, if I could understand more about how to use it, it's very good system for our life. As it can be applied for everything.”

Hand on: Geospatial Analysis using FOSS

Conducted by: Dr. Sarawut Ninsawat, Date: 28 August 2017

The participants learned about QGIS analysis which is provided common functions and features to provide a GIS data viewer. Furthermore, they learned about Vector analysis. They got chance to use QGIS software to understand GIS applications and solve sample problem (dataset) using analysis tools.



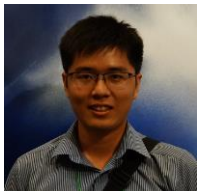
Moses Badip Tawng La (*4th-year undergraduate student, Anglican Development Department*)

“Today, I have used the QGIS software. That is my first time to use it and try to do mapping project. I learned how to make map, how to calculate the distance and how to use to solve a problem. This is very useful and I got very adventure experiences of QGIS mapping within at the lecture.”



Yoshino Suzuki (*1st-year undergraduate student, International Studies*)

“It's difficult for me to understand this system because this is first time. It's very good system for our life. It can be used for everything.”



Ho Lam Truong (*Graduate student, Geographic GIS and Remote Sensing Research Center*)

“QGIS is a very powerful open source software. It provides the same GIS functionality as commercial software such as ArcGIS. I learned how to open spatial data, how to queries, how to analyze spatial data, how to create a simple map in QGIS software. With a sample dataset about agriculture, I understand the steps for analyzing agricultural data based on different situations. QGIS is open source software but it provides full functionality of GIS software. So, I think it is very useful for our researches when we cannot buy commercial software licenses.”



Shoki Kobayashi (*3rd-year undergraduate student, English Language and Culture*)

“It was first time to use this kind of application, but I could make map through the system. This kind of opportunity will make my presentation or research more interesting!”

Agribusiness Management: Global Perspective

Conducted by: Dr. John K. M. Kuwornu, Date: 29 August 2017

The participants learned about food and agribusiness such as growth of the food and agribusiness system, contemporary issues in agribusiness and systems approach to agro-industrial analysis. Moreover, the lecturer explains more sample case studies.



Salah Khalfan Ali Alsakiti (*Graduate student Nature reserves department*)

“I was very interactive lecture. we learn about the concept of agribusiness and its relation to food. Also, how things change with time regarding agribusiness and the challenges associated with it. In addition, that all processes are in related changes (cycle) which interact with each other.”



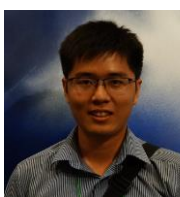
Masamitsu Kotone (*3rd-year undergraduate student Environmental Biology*)

“I learned about agribusiness management. If I open a business of agriculture, it will be very important.”



Malte Grosse (*Undergraduate student Business Informatics and Digital Media*)

“Very interesting to see all stakeholders who are involved into the food production process. There are many steps in these processes which can be optimized by using IoT.”



Ho Lam Truong (*Graduate student Geographic GIS and Remote Sensing Research Center*)

“I learned about the growth of the food and agribusiness system. The modern food and agribusiness system is the chain includes: input supply sector; the farm sector, the processing and distribution sector. The contemporary issues in agribusiness includes: globalization, information and ICT, food quality and safety, biotechnology, consumer driven supply chain. I think on the trend of globalization and the development of information technology, the production and distribution of agriculture should be related to business. We need to know about our customers and their needs.”



Nimisha Wagle (*Undergraduate student Geomatics engineering*)

“In this lecture I learned about the agribusiness in global perspective. I learned about the sectors of modern food and agribusiness system. I also learned about different components of them. I learned about the key issues i.e. contemporary issues in the agribusiness. I also learned about systems approach to agro-industrial analysis and. Learned about the various linkages which play a great role in agro industry.”

Smart Farm Initiative in Thailand

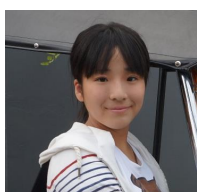
Conducted by: Mr. Pisut Paiboonrat, Date: 29 August 2017

The participants learned about the smart agriculture project in Thailand. The lecturer started with the new technology and innovation approach for Thailand 4.0. The role of ICTs in agriculture is the one important topic for supporting the smart farmers. The example of E-agriculture solutions is the data visualization named “AgriMap and What2Grow” provided as web mapping service. Not only the location based service, there are also the development in Area based service such as field operators from UAV or sensor.



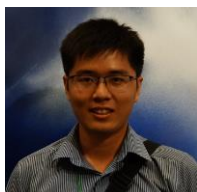
Rungphet Singnawarat (*4th-year undergraduate student, Geography*)

“learned about Smart Farm or Intelligent Agriculture. It is a new farming model that will make farming practices immune to climate change. By applying climate information at both the sub-level and the macro level. Used in management Care for the crop To be consistent with the weather. Including weather preparedness will change in the future. By the way. High precision farming or high precision agriculture.”



Yoshino Suzuki (*1st-year undergraduate student, International Studies*)

“I learned some problem about the current agriculture such as lack of farmer likes young generations and climate change. It need new production and change in the way of life. We should think about new technology, utilization of knowledge and information.”



Ho Lam Truong (*Graduate student, Geographic GIS and Remote Sensing Research Center*)

“1. Today, the world is changing (more population, climate change, reduction in farm land...). The application of high technology to agriculture is necessary. Based on the development of technology, we can produce more agricultural products with high quality. Today, the definition of farmers has changed. They may be traditional farmers, new generations of farmers, or scientists.
2. The applications on this WebGIS platform and mobile applications, sensor network system, remote sensing etc. is being used very effectively in Thailand.
3. I will try smart agricultural software that are introduced by Dr. Pisut Paiboonrat in this lecture.”



Moses Badip Tawng La (*4th-year undergraduate student, Anglican Development Department*)

“Smart farms are growing by utilizing science and technology to be faster and more efficient while growing and producing food supply. Smart farming touches every aspect of farming technology, from water conservation and animal welfare to sustainability and habitat conservation.”

Alternative Future for a Ramsar Wetland: A case study from North East India Conducted by: Dr. Chitrini Mozumder, Date: 29 August 2017

The participants learned the meaning of wetland and its importance. The wetland is the area that water is the primary factor controlling the environment, plant and animal. The lecturer demonstrated the case study in “Deepor Beel Wetlands, Assam, India”. The main objective of this research is to simulate urban and agricultural growth.



Masamitsu Kotone (3rd-year undergraduate student, Environmental Biology)

“I learned about wetland. This is my first time to heard about the wetland. Moreover, this lecture let me realize that there is some problem if the river disappears.”



Sarra L. Maravilla (5th-year undergraduate student, Geodetic Engineering)

“I have learned the importance of wetlands in the ecosystem and disaster management (acts as a natural storm water basin) and learned that we need to take care our wetlands from the growing population of our country.”



Mamoru Sugimura (2nd-year undergraduate student, English Language and Culture)

“I have learned India's society and it was our first time a woman's professor so I'm really interested in it.”



Meakh Sovanborey (4th-year Undergraduate student, Department of Geo-resource and Geotechnical Engineering)

“Wetland refers to area where water is the primary factor controlling the environment and the associate plant and animals. In Dr.Chitrini Mozumder's lecture had also shown about the importance of wetland as its habitat (nesting, spawning, resting site for aquatics and land species or food chain production etc.). Moreover, it still relates to hydrology (protect other area from wave action and erosion, storage etc.), as well as contribution to protect water quality or water filtration and purification. Beside from that, from the lecture we get to know that wetland is worth to protecting and preserving by showing the economic data from different countries. In order to preserve wetland, we need to deal with its major problem, population growth. Since the increasing of population, it also increases the demand and pollution that reduce the wetland. A lesson about wetland also have been put into our education since secondary school, and of course we have been preserving wetland as well.”

GNSS lecture and Hands on

Conducted by: Dr. Sanit Arunpold, Date: 30 August 2017



The participants obtained the basic knowledge and concept about GNSS which are GNSS products, GNSS requirements, GPS segment, the principle of measurement, orbit comparison and GPS positioning. Moreover, they learned how use GPS. Moreover, they learned GPS type and application.



Shoki Kobayashi (3rd-year undergraduate student, English Language and Culture)

“I learned the uses of satellite and used one of them for real. It was the first time to use that kind of machine, but it was useful. I hope I will continue to use for my research.”



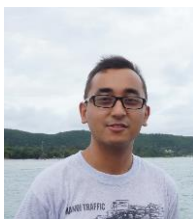
Salah Khalfan Ali Alsakiti (Graduate student, Nature Reserves Department)

“We learn about GNSS and how gps works. The game part in this class was very good in which we find out the locations.”



Masamitsu Kotone (3rd-year undergraduate student, Environmental Biology)

“I leaned about GPS and GNSS. I'm surprised Japan have many GPS antenna. I usually use GARMIN device when I ride bicycle. I need to know how that device is receive the data from satellite.”



Prabhat Joshi (Research Assistant School of Environment, Resources and Development)

“This lecture on GNSS helped me understand the progression and applications of navigation systems to detect the space and time dimensions of an object to a pinpoint accuracy. I will use this knowledge in my further studies and profession for spatial and temporal analyses of objects.”



Gizem Sacihan (4th-year undergraduate student, Geomatics Engineering)

“We have learned about GPS applications and the technical knowledge behind it. I will use it for both my technical and personal life for sure.”

8. Comments on Field Trip

GISTDA Sriracha

Date: 24 August 2017

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.



Yurina Kai (*4th-year undergraduate student, Food and Nutritional Sciences*)

“I have learned the basic information about satellite system and I have known the satellite of Thailand name Theos. I have also seen the actual data acquisition of satellite.”



Salah Khalfan Ali Alsakiti (*Graduate student, Nature Reserves Department*)

“It was the first time I have visited an agency that manage space satellite. They teach us about Thai satellite and introduce us about their center and various applications that satellite support the country.”



Shoki Kobayashi (*3rd-year undergraduate student, English Language and Culture*)

“I learned about the satellite system and the fundamental of RS and space satellite technology. We also could see many facilities even satellite control center. This opportunity was one of the greatest memory.”



Nimisha Wagle (*4th-year undergraduate student, Geomatics engineering*)

“I have learned about the Thai satellite Theos and the all the project that Thailand currently working on. I learned about the satellites and its types and the application of the Theos. I learned about the band designation of the Theos. I visited the science museum and learned about the gyroscope and viewed the history of the earth. I saw the map of the earth. It was good experience for me.”

Kung Krabaen Bay Royal Development Study Center

Date: 17 August 2017



Kung Krabaen project is the Royal initiative, which is “To consider a suitable area for development of Fisheries and Agricultural activities on Chanthaburi coastal zone”. The four main objectives of this project are 1) To Preserve of natural resources on mountain in order to prevent degradation of forest, soil and freshwater. 2) To provide the suitable technique and knowledge for the agricultural extension on lowland. 3) To manage the coastal zone such as mangrove areas or seawater irrigation for shrimp

culture. 4) To develop oriented tourism for showing the centre’s awareness. With this program, the participants got a chance to observe the harvesting shrimp. Then, the participants went to the crab bank and the growing of vegetation inside the project.



Rungphet Singnawarat (*4th-year undergraduate student, Geography*)

“I learned Khung Kraben Bay Royal Development Study Centre is situated on the coast of Chanthaburi Province and was established in 1981 as a result of His Majesty the King’s concern about the deterioration of the mangroves. His Majesty recognized the importance of the mangroves to people’s lives and sought to rehabilitate the fisheries and mangrove forests in this region and maintain the equilibrium of the ecosystems. Besides the development of coastal marine resource management and sustainable ecosystems in the region, the Centre’s goal is to promote the preservation of natural resources for the local people and visitors.”



Sumbul Jabbar (*Master student, Remote Sensing and Geo-Information System*)

“Different procedures that are being used to save the endangered species, irrigation system, different techniques that can be applied in the home garden and can be source of income by learning in the center.”



Gizem Sacihan (*4th-year undergraduate student, Geomatics Engineering*)

“I had chance to have knowledge about the current developments and applications about farming and ship farming. It was nice to not to just hear about it but also to have chance to visit the fields.”



Malte Grosse (*4th-year undergraduate student, Business Informatics and Digital Media*)

“Very interesting is the low cost and high sustainable agriculture (tomatoes/melons). The area is very calm and beautiful. The supporting to local shrimp farmers is really good. It is very good that the King supported these projects.”

The Golden jubilee Museum of Agriculture Office

Date: 30 August 2017

This museum is the learning tourist attraction, which have both of indoor and outdoor museums. The participants have the chance to observe at "The King Loves Us Museum". This museum shows the talents of His Majesty the King in agriculture, royal rituals related to agriculture. Moreover, the museum also presented about the traditional of Thailand such as market, old style shop or old house. After the sightseeing around the museum, the participants viewed the 3D animation about the talents of His Majesty the King in the Rainmaking story.



Sarra L. Maravilla (5th-year undergraduate student, Geodetic Engineering)

"I've seen and learned the traditional farming lifestyle of Thailand people. I've learned how good their King was whenever there are problems and difficulties with regards to agriculture and farming as it was shown in the short movie presented in the museum."



Meakh Sovanborey (4th-year Undergraduate student, Department of Geo-resource and Geotechnical Engineering)

"We live with nature, so we have to preserve it but we need the cooperation from everyone. Beside from that, I got to know more about Thailand by seeing lots figures and structures indicate to Thai's culture."



Yurina Kai 4th-year undergraduate student, Food and Nutritional Sciences

"I learned about history of agriculture in Thailand. I got to know about Thai king's contribution to the agriculture sectors of Thailand."



Rungphet Singnawarat (4th-year undergraduate student, Geography)

"I learned about the honor and genius of the Thai monarchy and the relationship. In agriculture from past to present Including Royal Projects, Royal Duties and Royal Ceremonies involving with the agriculture. I think it can be applied in everyday life. There are enough economic theories that can be applied."



Moses Badip Tawng La (4th-year undergraduate student, Anglican Development Department)

"Today, when I'd finished my lunch, I'd visited to the Golden Jubilee Museum of Agriculture Office in the afternoon. The museum depicts the development of agriculture and modern agricultural technology, forestry, fishery, animal husbandry, and ecology. I'd watched the 3D movie as well."

PASCO (Thailand) Co., Ltd.

Date: 31 August 2017

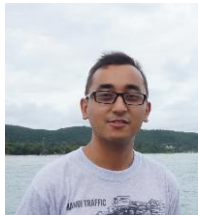


PASCO (Thailand) Co., Ltd. is the company offering a full range of professional services in Aerial Photography, Digital Photogrammetry & Mapping, Surveying and GIS, both in Thailand and internationally. With this program, the participants got a chance to observe line mapping, orthophoto and 3D map process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



Moses Badip Tawng La (*4th-year undergraduate student, Anglican Development Department*)

“PASCO company is high technological Japanese company running in some countries and they are working mainly is to adjustment to ortho photo, convert to 3D mapping. The one of my observation is very important which is data collecting. Before they are doing their mapping 2D or 3D whatever firstly they are collecting and surveying to get the real data.”



Prabhat Joshi (*Research Assistant School of Environment, Resources and Development*)

“I learnt about the human resource and management team required to produce reliable geospatial data that could be used for everyday use.”



Meakh Sovanborey (*4th-year undergraduate student, Department of Geo-resource and Geotechnical Engineering*)

“From PASCO, I got to know how RS and GIS actually contribute in business as there are many projects like Mapping from Aerial photography, Orthophoto production, GPS, MMS, POI, surveying which PASCO have been working on and have been finished processed by many applications. Seeing engineers working real time from up close really get me motivated and know more about how hard and time-consuming it is to work on project relate Geospatial.”



Nimisha Wagle (*4th-year undergraduate student, Geomatics engineering*)

“Today we went to PASCO which is the world's leading geospatial lab and whose headquarter is in Japan which does mapping from aerial photography, Orthophoto production, GPS survey, POI and many more. Today we went to the different units of the Thai PASCO and learned different things like how to make ortho photo from the images and how to digitize the image from the orthophoto how to add POIs etc..”

Bang Krachao, Samut Prakan

Date: 31 August 2017

Bang Krachao have been known as the “green lungs” of the Bangkok. The participants have the opportunity to go to “Herbal Joss Stick Home”, which is the eco-tourism for teaching the adaptation of agricultural or natural products. In this place, the participants learned how to color the fabric with the traditional ways of Thailand. Then, we moved to the “Sri Nakhon Kuenkran Park” for cycling the bicycle. This park are famous as they are the oasis of trees, lakes, and trails.



Meakh Sovanborey (*4th-year Undergraduate student, Department of Geo-resource and Geotechnical Engineering*)

“Painting fabric by ourselves is really enjoyable. We learned how to create many patterns like colorful large spiral or shell out of single color or various colors. Beside from that cycling around Bang Kra Chao is also excited since we can enjoy nature by watching birds, fishes and trees while cycling. I also learned the real name of an animal species that I thought it was Komodo dragon, but actually they are water monitor or tree monitor.”



Shoki Kobayashi (*3rd-year undergraduate student, English Language and Culture*)

“We experienced some activities through the trip of Bang Kra Chao. We enjoyed cycling in the park and dyeing. It was first time to do that, so a thing I dyed will be good memory for my life.”



Yurina Kai (*4th-year undergraduate student, Food and Nutritional Sciences*)

“I learned that how to make traditional dyed clothes. I could also make it easily and happily.”



Yoshino Suzuki (*1st-year undergraduate student, International Studies*)

“I learned Thai traditional stuff. It's interesting for me!”

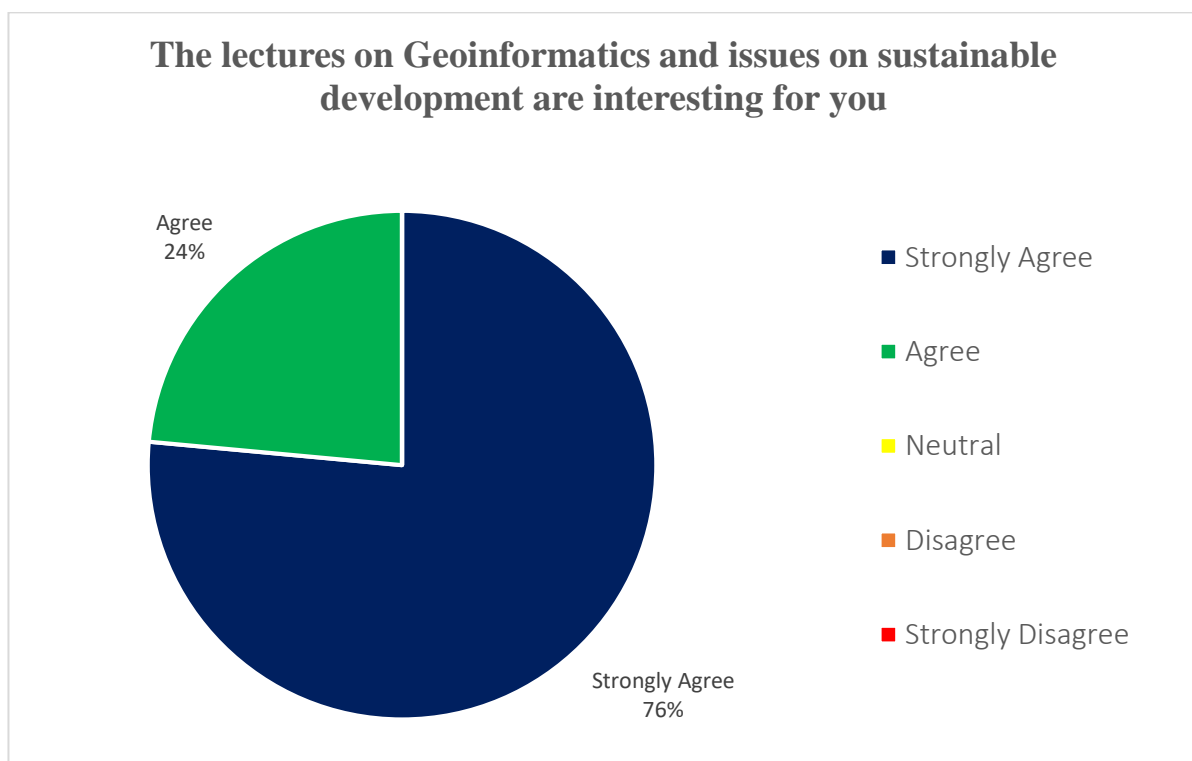
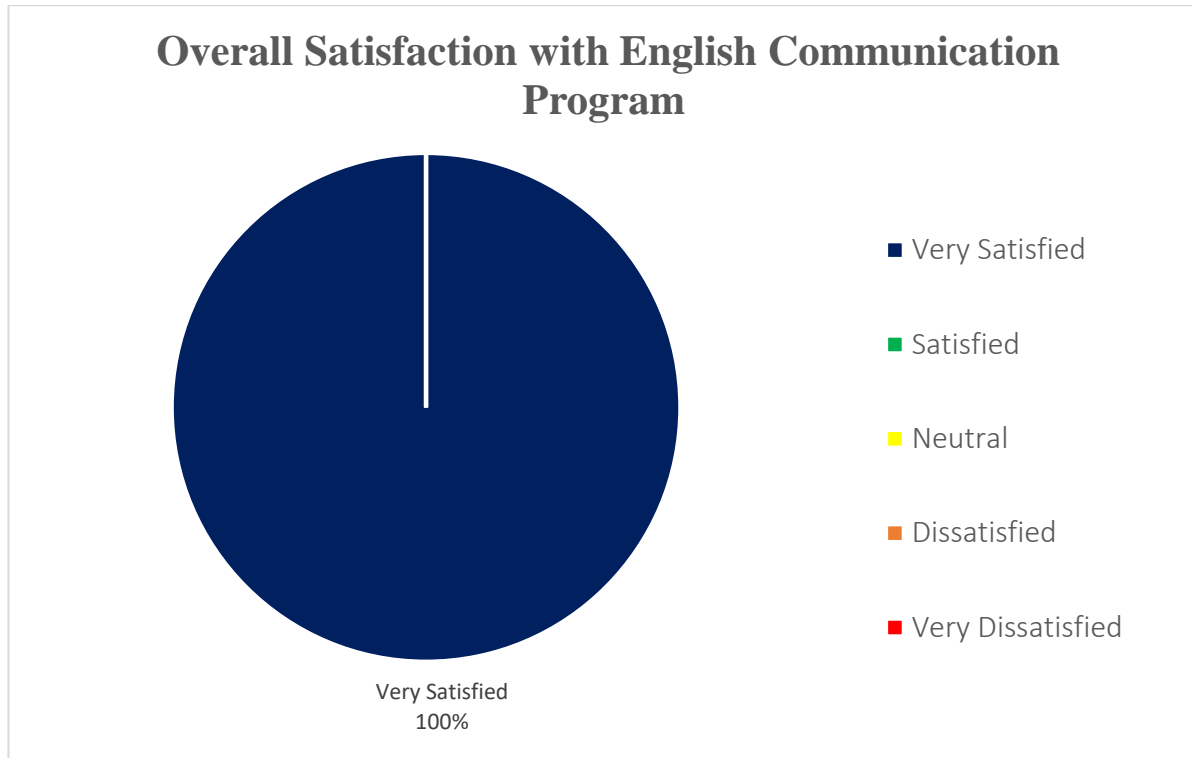


Mamoru Sugimura (*2nd-year undergraduate student, English Language and Culture*)

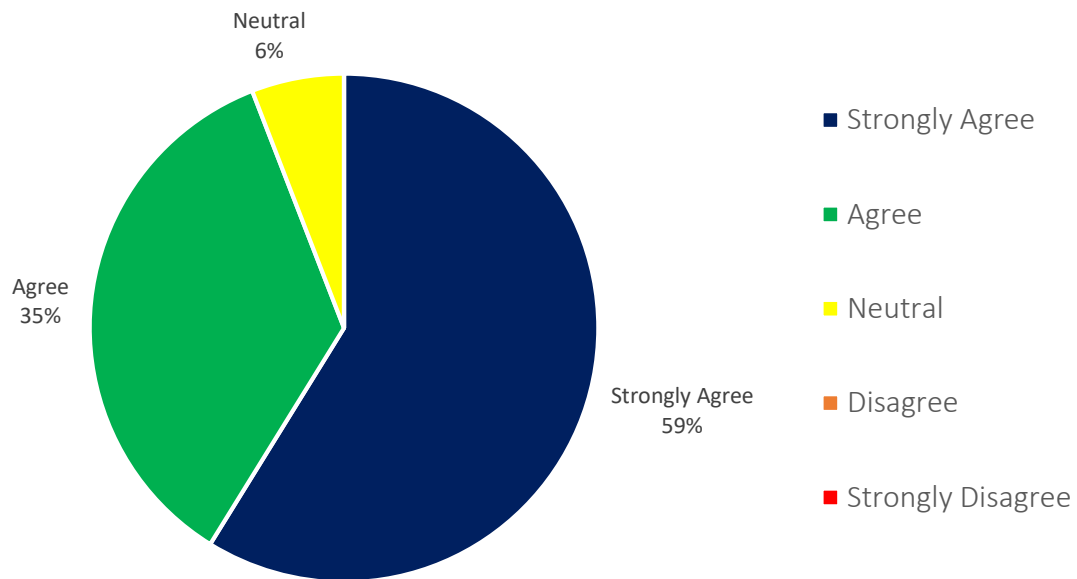
“I have learned how to make colorful fabric”

9. Program Evaluation

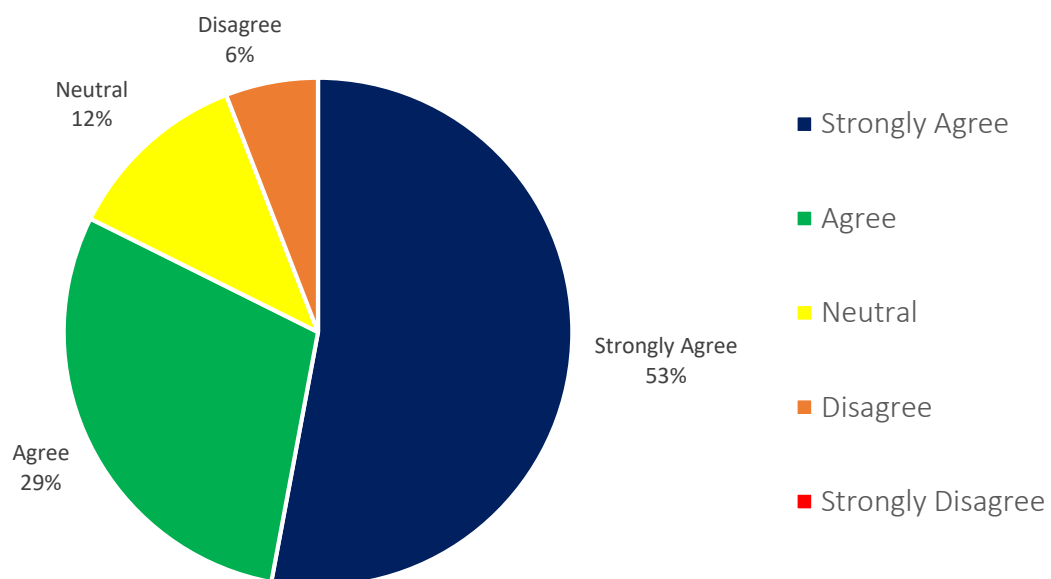
In this program, the evaluation forms were prepared for receiving feedbacks from participants in order to evaluate the program and identify weak point for improving further. The results from the first part are displayed as the pie charts below.



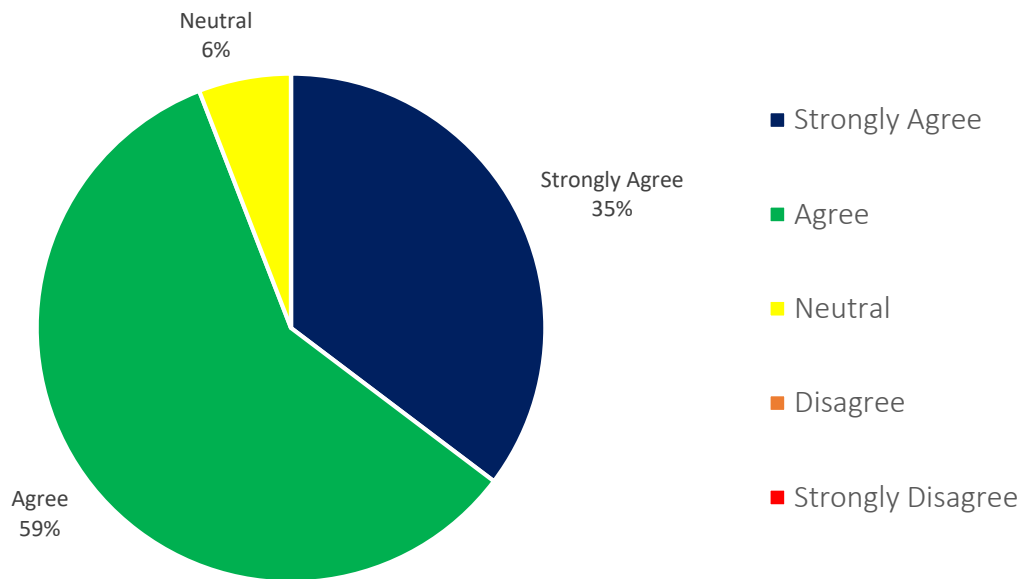
Lecturers are specialist in his/her career, which help you meet the learning needs in this program



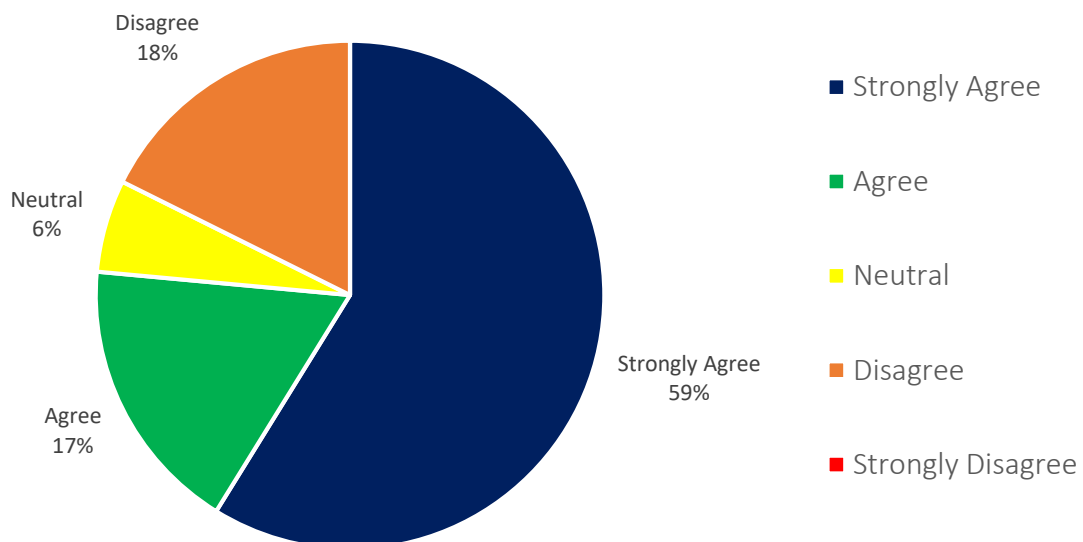
Lecture materials, facilities, equipment and supplies were appropriate for the program



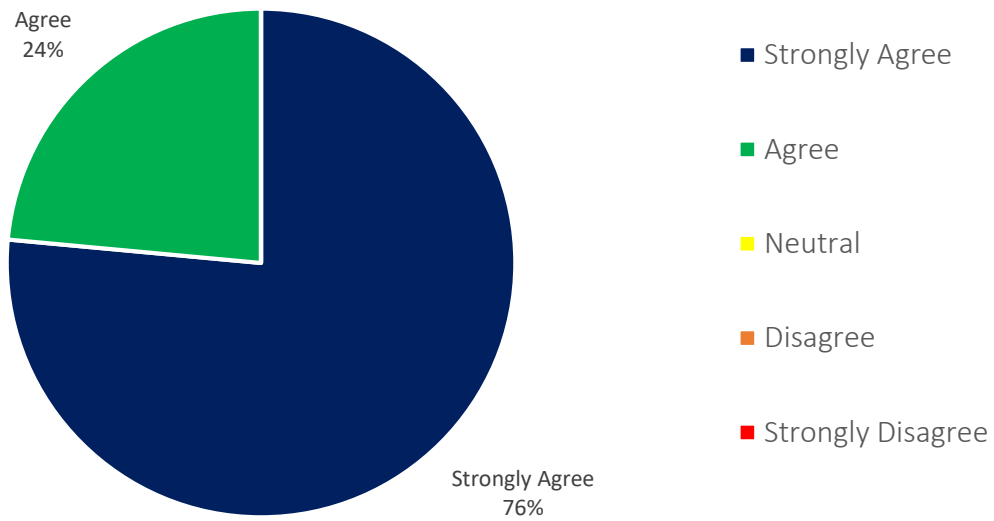
Hand on in OpenSource (QGIS) and GPS-GNSS are improved your technical Geoinformatics skill



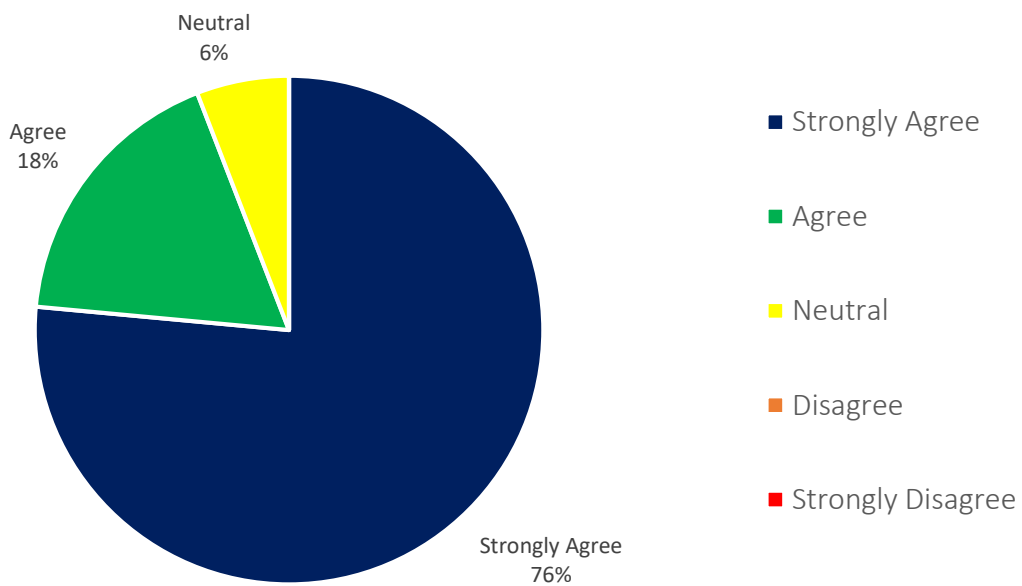
The amount of lecture classes, study hours or time dedicated to academic learning were sufficient for you



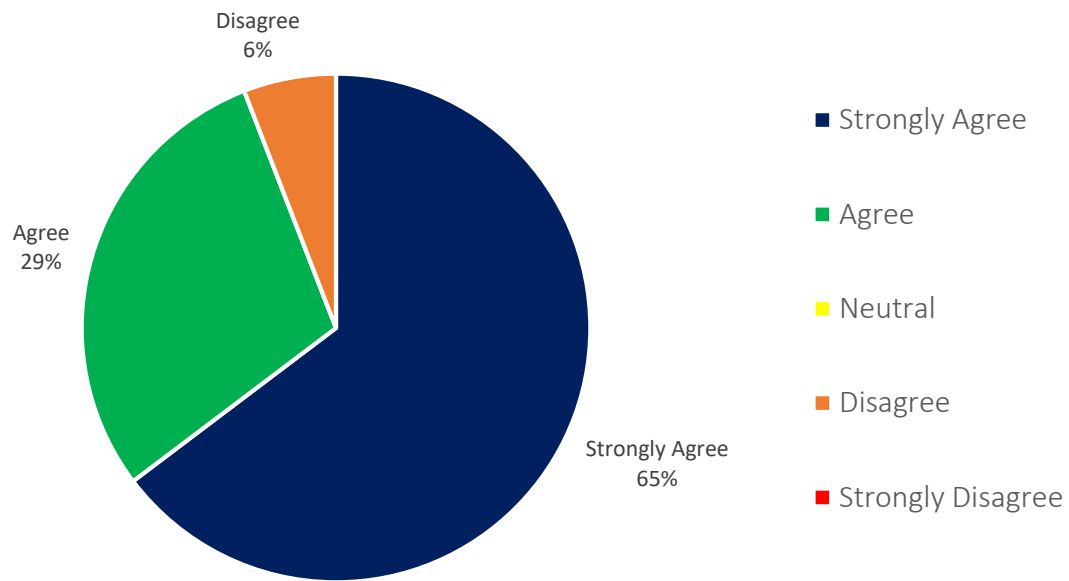
Visiting Geoinformatics organizations (government & private sectors) are good opportunity to learn and build capacity for you



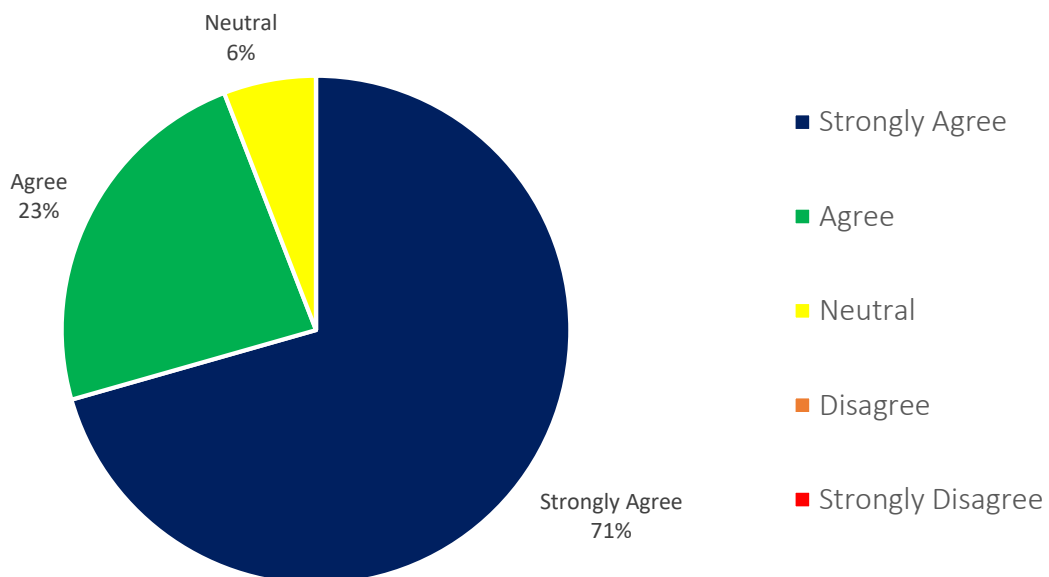
Accommodation at Sirindhorn Science Home (SSH) is comfortable and safe for you



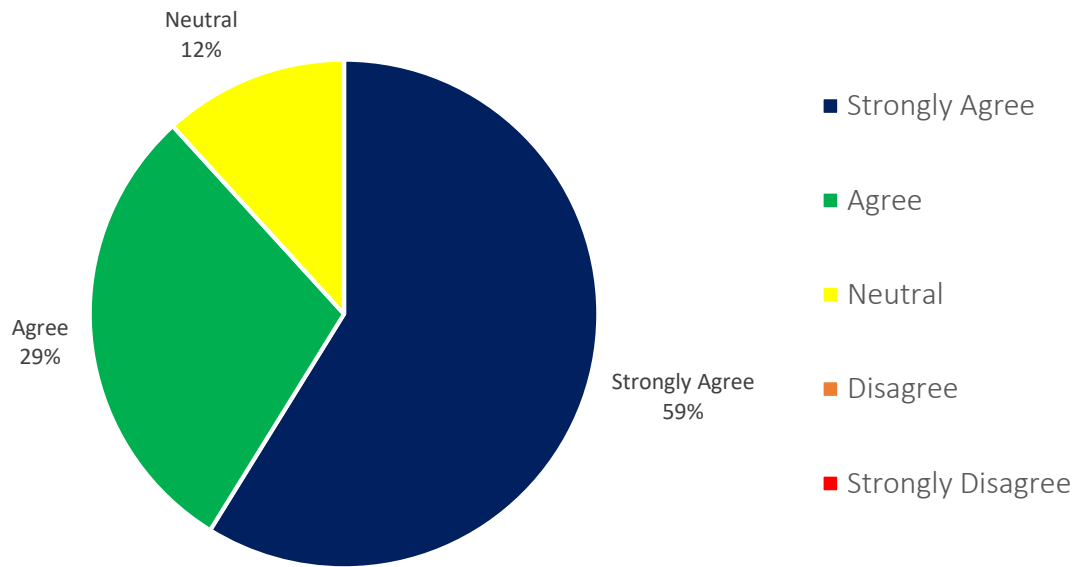
You are happy with the choice of curricular and extracurricular activities during this program



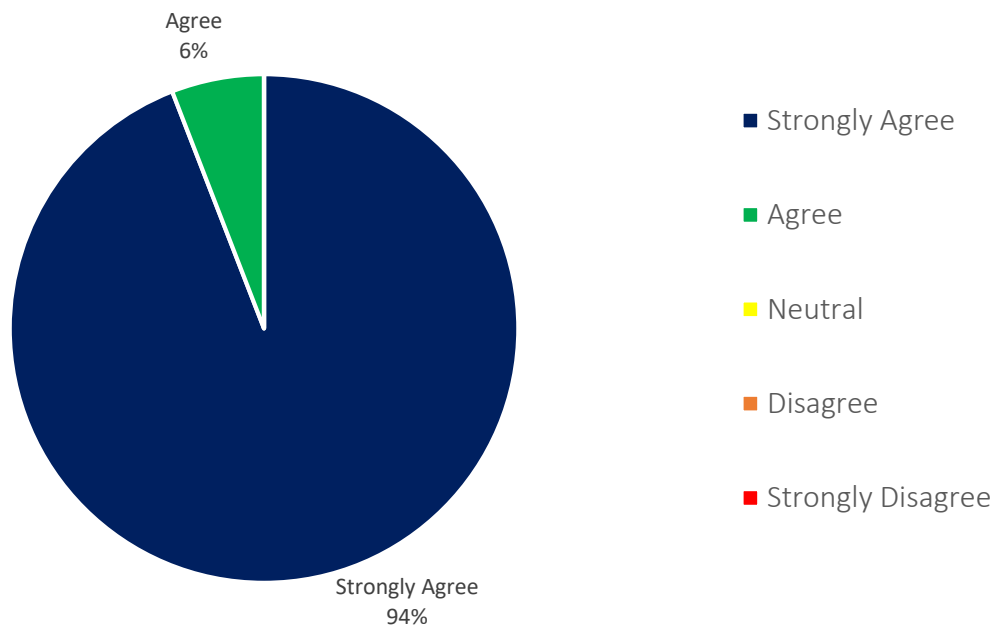
You learned the local culture through local life style like places, food, people, etc.



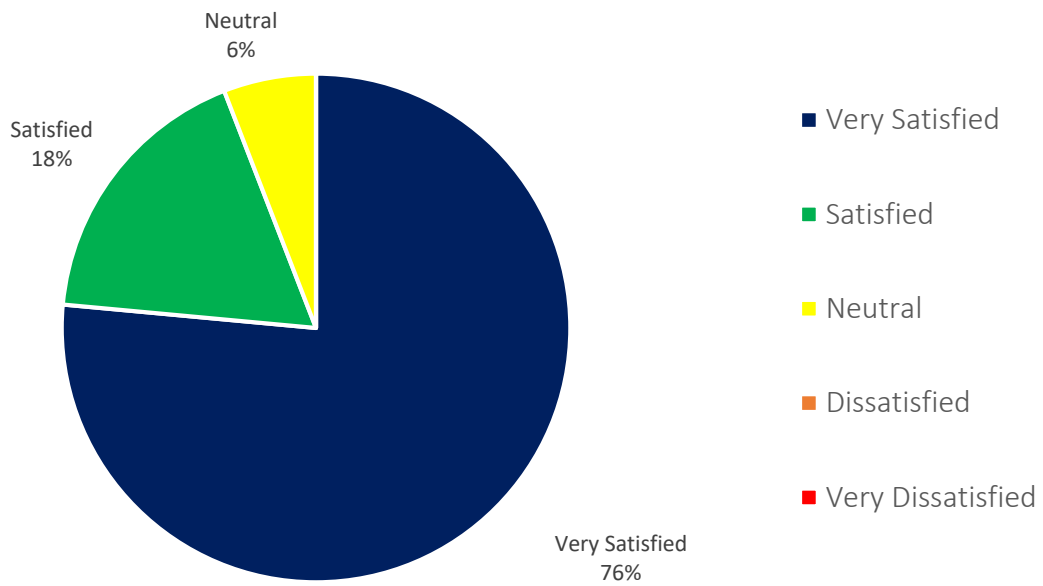
You are happy with the quality and taste of food, drinks and snacks provided for your study brake



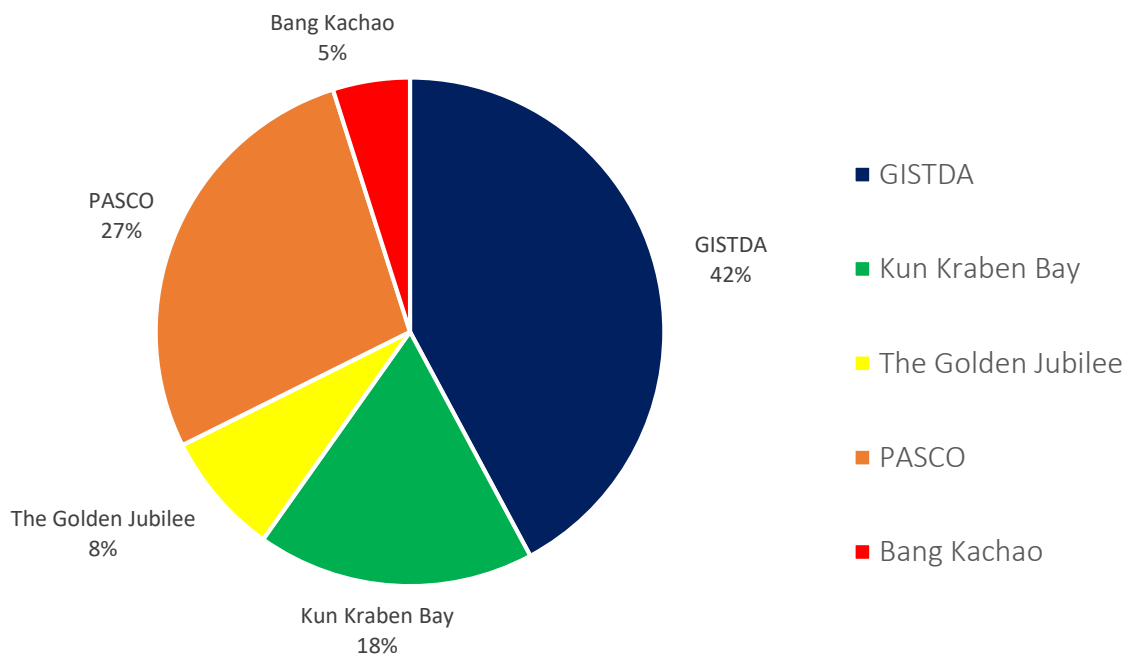
This program is good chance to obtain experience in multicultural environment



Overall, please rate your satisfaction score for the Summer School in Bangkok 2017 program



Top rank preferable organizations



The second part shows suggestions from participants as follows.

- ❖ This course is good opportunity for me to meet scientists and scholars in the field of remote sensing, GIS, agriculture, computer science, environment and etc. I am really interested in lectures. Because the lectures are very suitable for my work. Teachers introduced about modern technologies and smart applications in agriculture. So, I will study about them after returning home. I have very interesting and useful field trips. It helped me understand more about culture and development of Thailand. I am very grateful for the help of teachers and assistants.
- ❖ This camp has many experiences. Both knowledge and good friends. Thank You for this camp.
- ❖ This program is really get me motivated and I got to learned a lot more than expected. Thank to this program, my point of view is really change a lot to a better side. My most appreciations are I got to enjoy the lectures, my stay in Thailand as well as my visiting to many different places. My only request is I want to have more lecture than that, because all the lectures is very interesting.
- ❖ Everything was managed perfectly and I would like to thank to AIT :)
- ❖ I'd enjoyed all the lectures in the class and visiting outside for sensing are very nice opportunities to get the experiences. I'm very appreciate for this summer school at the AIT, which is the participants are come from different backgrounds, countries and multi-national. Thank you!
- ❖ I'm really happy to attend this camp. In addition, I would like to say thank you to all lecturers and assistants. They always helped us and be nice to us.
- ❖ I have good experience here. I leaned about new things. And I made new friends who come from other countries.
- ❖ The hands-on exercises should be expanded and the theoretical lectures should be complemented with practical exercises.
- ❖ Thank you
- ❖ It was a really nice time. Really good job Peam & Nut done. Few minor things I would improve in organization: half day classes, and afternoon practical trainings, because three classes per day is a bit hard to listen too. Thank you all khab.
- ❖ Thank you all for everything it was great to be in here. I hope I was a good participant. I love you all <3
- ❖ Thank you for three weeks. I can't speak English enough, but I really happy to join this program. I thought that I should be more study English. This program is very important experience for my life. I will change my life.
- ❖ I had a good time three week. Thank you so much, Nut and Peam. I made new friends who tell me about their religion, culture and lifestyles. I realize that it is important to understand other countries. I want to know more about English to be able to communicate with other people from other countries.
- ❖ Thank you very much for nice organization. I hope if we could receive electronic version of course materials (as black and white handout sometime not easy to read after class). I wish if there was more practical exercise in the lab.
- ❖ I had so many new learnings and had so many awesome experiences. Thank you! All the best! :)
- ❖ It was very difficult to understand all lectures but I'm interested in agriculture from Summer School. I'm so happy to meet many people.
- ❖ Overall is good. I enjoyed the stay at the Thailand.

10. Conclusion and Recommendation

The Asian Summer School in Bangkok 2017 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 Agriculture”. Additionally, activities such as hands-on were provided for the participants 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 field trip at Chanthaburi province to build a good relationship with each other.

According to the result of program evaluation, 76% of participants voted that they are very satisfied in the overall satisfaction of the program. In parts of the satisfaction of each statement had the average score in 4 to 5. The participants voted that the multicultural environment of this camp had the highest score.

Anyway, there was some suggestion from participants obtained from program evaluation. Mostly, participants gain knowledge, friendship and new experiences. Some students realized the importance of English skill and have the motivation for focusing on practicing the English skills after going back to hometown. Some students mentioned about the difficulties of understanding all the lectures as our lecturers come from many countries and have different accent. However, the organizer solved this problem by recording the video during the class and upload them for the participants. Moreover, some participants commented that the three-week period of this camp was not sufficient and recommend us to have longer period for this camp. Some participants also want to have more lecture as all lectures during the camp were interesting.

For the lecture classes, some participant also suggested that we should organize the program to be only half day classes and change the program in the afternoon to be practical training. However, they have some limitation about the management such as transportation, budget and staff. Furthermore, some participants commented about the lecture material or handout. Some participant wanted the color version of course material and some participant complain that they were some lecture that do not provide the lecture material. The organizers solve this problem by uploading the electronic version of material and send them to the participants. However, lack of some lecture material occurred as it was the problem of requesting the lecture material from the lecturer that should process in advance. Furthermore, the participants also mentioned about the sound system facilities during the online lecture that should be clearly and loudly.

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. In addition, the requirement about the spicy or non-spicy food should be added to registration form.

In summary, the program achieved the main purpose that the participants could gain some experience and knowledge related to GIS for sustainable agriculture. According to the evaluation, most of the participants were very satisfied with the program and from the assignment asked to submit, the participants could give 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

21 August 2016



Lectures

21 August -1 September 2017



Relax Time: Pizza Party & Presentation

21 August 2017



Geo-Informatics and Space Technology Development Agency (GISTDA)

24 August 2017



Chanthaburi province

24 - 27 August 2017



Kun Kraben Royal King Project

26 August 2017



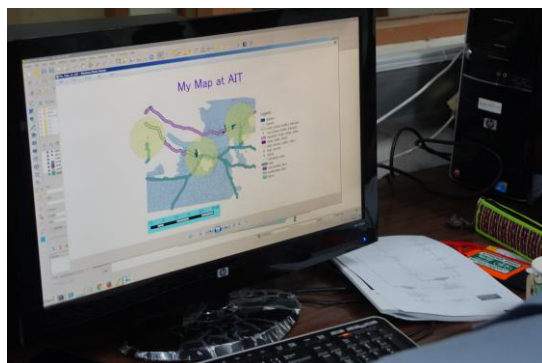
Hand on : UAV experiment in the field and processing

24 August 2017



Hands Geospatial Analysis using FOSS

28 August 2017



Relax Time: Party with GIS & Remote Sensing Student

29 August 2017





The Golden Jubilee Museum of Agriculture Office

30 August 2017



PASCO (Thailand) Co., Ltd.

31 August 2017

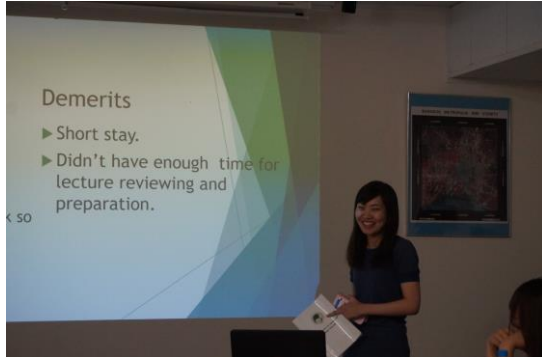


Bang Krachao
31 August 2017



Individual Presentation & Closing Ceremony

1 September 2017



Appendix 2: Questionnaire

Survey Summer School in Bangkok 2017 Geoinformatics for Sustainable Agriculture 21 August - 1 September 2017

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 2017 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
- _____ Kun Kraben Bay Royal Development Study Center
- _____ Bang Kachao
- _____ GISTDA
- _____ The Golden Jubilee Museum of Agriculture Office

Comment & Suggestion:

Thank you for your cooperation