

REPORT

Asian Summer School in Bangkok 2019

Geoinformatics for Sustainable Development



12 - 23 August 2019



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 2019” program from August 12th to August 23rd, 2019 at Asian Institute of Technology, Pathumthani, Thailand. The theme of the program was “Geoinformatics for Sustainable Development”.

A total of 15 participants, 9 nationalities, came from 10 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, four participants from Chubu University joined. Among participants from Japan, there are four undergraduate students (Communications, Environmental Biology and Psychology). For non-Chubu students, there are four graduated students: one Vietnamese staff from Ho Chi Minh City Space Technology Application Center (Ho Chi Minh City University of Social Sciences and Humanities), one Vietnamese master student from Can Tho University (Land Resource Department), one Burmese master student from Yangon University (Archaeology Department) and one Thai master student from Chulalongkorn University (Water Resources Engineering Department). There are seven undergraduate students: one Filipino student from Bicol University (Department of Geodetic Engineering), one Cambodian student from Institute of Technology of Cambodia (Geo-resources and Geotechnical Engineering Department), two Australian students from Griffith University (one from School of Environment and Science and one from School of Engineering and Built Environment), one Nepali student from Kathmandu University (Department of Civil and Geomatics Engineering), one Sri Lankan student from University of Moratuwa (Department of Town and Country Planning) and one Thai students from Khon Kaen University (Geographic Information System Department). The summary of participant is present in Table. 1.

Several lectures and field trips were conducted during the 12 days of this program. 13 lecturers are from different Fields of Study in AIT (Remote Sensing & GIS, Computer Science and Information Management, Water Engineering and Management, Energy, Sustainability and Natural Resources Management). In addition, three external lecturers are from other organizations which is Chubu University and Thailand's National Electronics and Computer Technology Center. Moreover, six visits and field trips were conducted to connect what participants learned from lectures with the real world. Participants visited Khao Hin Sorn Royal Development Study Center, LoomSook Farm, The Golden Jubilee Museum of Agriculture Office, PASCO (Thailand) (Air Survey Company, Japan), Bang Kra Chao and Geo-Informatics and Space Technology Development Agency (GISTDA). 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 2019 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.

For this year, we are honored by Professor ISHIHARA Osamu, Chubu University President, and Professor Deepak Sharma, Vice President for Academic Affairs (VPAA) to deliver an opening remark and provide a speech for the Asian Summer School 2019 opening ceremony on 14th August 2019.



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

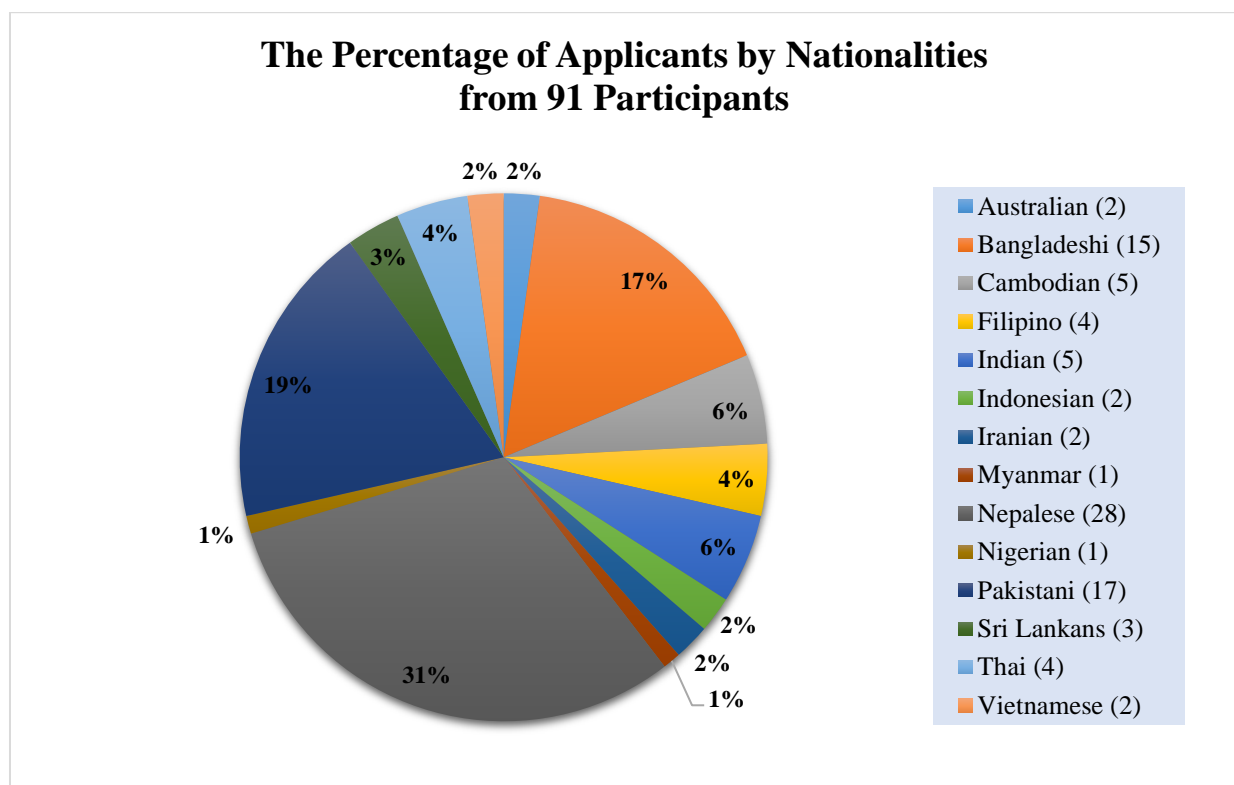
No.	Name	Age	Sex	Country	Grade	Field of study	University/Organization
1	Kosei Nagato	21	M	Japan	UG	Environmental Biology/College of Bioscience & Biotechnology	Chubu University
2	Kota Kakinoki	21	M	Japan	UG	Environmental Biology/College of Bioscience & Biotechnology	Chubu University
3	Rie Kanai	21	F	Japan	UG	Communications/ College of Humanities	Chubu University
4	Ryo Miyake	19	F	Japan	UG	Psychology/ College of Humanities	Chubu University
5	Carol Mae Buenconsejo Bellen	21	F	Philippines	UG	Department of Geodetic Engineering	Bicol University
6	Vuthlay Phouk	21	F	Cambodia	UG	Geo-resources and Geotechnical Engineering	Institute of Technology of Cambodia
7	Nguyen Kim Thanh	24	F	Vietnam	Staff	Ho Chi Minh City Univeristy of Social Sciences and Humanities	Ho Chi Minh City Space Technology Application Center
8	Jacob Breslin	19	M	Australia	UG	School of Environment and Science	Griffith University
9	Martin Luna Junca	20	M	Australia	UG	School of Engineering and Built Environment	Griffith University
10	Aakash Thapa	21	M	Nepal	UG	Department of Civil and Geomatics Engineering	Kathmandu University
11	L. D. C. H. N. Kalpana	23	M	Sri Lanka	UG	Department of Town and Country Planning	University of Moratuwa
12	Ran Naing Lin	22	M	Myanmar	Master	Archaeology Department	Yangon University
13	Nathamon Phanomphongphaisarn	29	F	Thailand	Master	Water Resources Engineering	Chulalongkorn University
14	Wilawan Robroo	22	F	Thailand	UG	Geographic Information System	Khon Kaen University
15	Thai Thanh Du	28	M	Vietnam	Master	Land Resources	Can Tho University

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 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 91 applicants from 14 countries who applied for Summer School in Bangkok 2019. The age of applicants ranges from 18 to 39 years old and most of them are 19-26 years old (67 participants or 74%).



In order to select potential candidates, Dr. Shinya 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



Can Tho University



Chubu University



Chulalongkorn University



Griffith University



Institute of Technology of Cambodia



Kathmandu University



Khon Kaen University



University of Moratuwa



Yangon University

Countries:



Australia



Cambodia



Japan



Myanmar



Nepal



Sri Lanka



Philippines








Thailand



Vietnam

Participants:

Griffith University	Griffith University	Institute of Technology of Cambodia
		
Jacob Breslin (Australians) Undergraduate student Environment and Science	Martin Luna Juncal (Australians) Undergraduate student Engineering and Built Environment	Vuthlay Phouk (Cambodian) Undergraduate student Geo-resources and Geotechnical Engineering
E-mail: jacob.breslin@griffithuni.edu.au	E-mail: martin.lunajuncal@griffithuni.edu.au	E-mail: vochlaypk@gmail.com
Chubu University	Chubu University	Chubu University
		
Kosei Nagato (Japanese) Undergraduate student Environmental Biology	Kota Kakinoki (Japanese) Undergraduate student Environmental Biology	Rie Kanai (Japanese) Undergraduate student Society and Media communication
E-mail: yuseiwwkani@docomo.ne.jp	E-mail: k-kouta0528@ezweb.ne.jp	E-mail: mukumoga.810@softbank.ne.jp
Chubu University	Yangon University	Kathmandu University
		
Ryo Miyake (Japanese) Undergraduate student Psychology	Ran Naing Lin (Myanmar) Post Graduate Archaeology	Aakash Thapa (Nepalese) Undergraduate student Civil and Geomatics Engineering
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University of Moratuwa



L. D. C. H. N. Kalpana
(Sri Lankans)
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Town and Country Planning

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Bicol University



Carol Mae Buenconsejo Bellen
(Filipino)
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Geodetic Engineers

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Chulalongkorn University



Nathamon Phanomphongphaisarn
(Thai)
Master Student
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Khon Kaen University



Wilawan Robroo
(Thai)
Undergraduate student
Geographic Information System

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Can Tho University



Nguyen Kim Thanh
(Vietnamese)
Post Graduate
Social Sciences and Humanities

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Can Tho University



Thai Thanh Du
(Vietnamese)
Graduate master's degree
Land Resources

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5. Lecture Program

Date	Topic	Lecturer/Facilitator
6-9 Aug	RS-GIS Summer English Communication Program	AIT Language Center
12 Aug	Introductory lecture (with examples of health GIS)	Dr. Shinya Yasumoto
	Research on Digital Earth	Prof. Hiromichi Fukui
	Ubiquitous Geoinformatics	Prof. Kiyoshi Honda
13 Aug	Sensors and Big Data for Society	Dr. Apichon Witayangkurn
	Interferometric Synthetic Aperture Radar (InSAR)	Dr. Salvatore Virdis
	Geospatial Technology in Agriculture	Prof. Nitin Kumar Tripathi
14 Aug	UAV and applications	Dr. Sanit Arunpold
	Mobile video processing platform for agricultural	Prof. Matthew N. Dailey
	Smart city and smart traffic	Dr. Hiroyuki Miyazaki
15 Aug	Hand on : UAV, GNSS experiment in the field and processing	Dr. Sanit Arunpold
	Hand on : UAV Data processing	Dr. Sanit Arunpold
16 Aug	Resource Efficiency and Sustainable Cities	Dr. Sohee Minsun Kim
	Global Climate Change Impact and Water Resource	Dr. Sangam Shrestha
	Interoperable Geoinformatics & Location Base Service	Dr. Sarawut Ninsawat
21 Aug	Renewable Energy Resource and Technologies	Prof. Sivanappan Kumar
	Smart Farm Initiative in Thailand	Pisuth Paiboonrat
	Economic Values of Ecosystem Services: Overview of Asia	Dr. Takuji W. Tsusaka
	Use of Google Earth Engine in Studying LULC Change	Dr. Nophea Sasaki
22 Aug	Hand on : Crowd sourcing for Geospatial data (OSM)	Dr. Sarawut Ninsawat
	Hand on : Geospatial Analysis using Free Open	Dr. Sarawut Ninsawat

6. Field Trip Program

Date	Field Visiting
17 Aug	Khao Hin Sorn Royal Development Study Center, Chachoengsao
	LoomSook Farm, Chachoengsao
18 Aug	The Golden Jubilee Museum of Agriculture Office
19 Aug	PASCO (Thailand) Co., Ltd.
	Bang Krachao, Samut Prakan
20 Aug	Geo-Informatics and Space Technology Development Agency (GISTDA)

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 to get the comments and suggestions for further improvement. The table below presents the result of participants' submissions.

Name	August 2019										
	12	13	14	15	16	17	18	19	20	21	22
<i>Kosei Nagato</i>	O	O	O	O	O	O	O	O	O	O	O
<i>Kota Kakinoki</i>	O	O	O	O	O	O	O	O	O	O	O
<i>Rie Kanai</i>	X	O	O	X	O	S	O	O	O	O	O
<i>Ryo Miyake</i>	O	S	O	X	O	O	O	O	O	O	O
<i>Carol Mae Buenconsejo Bellen</i>	O	O	O	O	O	O	O	O	O	O	O
<i>Vuthlay Phouk</i>	O	O	O	O	O	O	O	O	O	O	O
<i>Nguyen Kim Thanh</i>	O	O	O	O	O	O	O	O	O	O	O
<i>Jacob Breslin</i>	O	O	O	O	S	O	X	X	X	X	X
<i>Martin Luna Junca</i>	O	O	O	O	O	O	O	O	O	O	O
<i>Aakash Thapa</i>	O	O	O	O	O	O	O	O	O	O	O
<i>L. D. C. H. N. Kalpana</i>	O	O	O	O	O	O	O	O	O	O	O
<i>Ran Naing Lin</i>	O	O	X	X	X	O	O	O	O	O	X
<i>Nathamon</i>	O	O	O	O	O	O	O	O	O	O	X
<i>Phanomphongphaisarn</i>	O	O	O	O	O	O	O	O	O	O	O
<i>Wilawan Robroo</i>	O	O	O	O	O	O	O	O	O	O	O
<i>Thai Thanh Du</i>	O	O	O	O	O	O	O	O	O	O	O

The meaning of the symbols

O = Submitted

X = Not submitted

S = Cannot attend because of sick

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: 6-9 August 2019



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 Asian Summer School in Bangkok 2019 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.



Kosei Nagato (*Undergraduate student, Environmental Biology*)

I decide to take this course because I want to improve my English skills. I learn how to do a good presentation from this class.



Kota Kakinoki (*Undergraduate student, Environmental Biology*)

I attend this course because I want to improve my English. I learn how to speak English. There are many discussions. I think it's so important to improve English. I think this class is great.



Rie Kanai (*Undergraduate student, Society and Media communication*)

I decide to attend this course because I want to improve more English skill and prepared for Asia Summer School. Thank you for teaching us.



Ryo Miyake (*Undergraduate student, Psychology*)

I decide to take this course because I want to study English.

Introductory lecture (with examples of health GIS)

Conducted by: Dr. Shinya Yasumoto, Date: 12 August 2019



This lecture introduces how Geographic Information Systems (GIS) can update research on health. In particular, the topic focuses on things which could not be achieved without GIS (The topic can be extend to a study on agriculture field). Moreover, this class learned about application of GIS in Snow's Cholera map and Sunlight analysis using 3D urban modelling.



Martin Luna Juncal (*Undergraduate student, Engineering and Built Environment*)

I learnt about the significance of GIS in a range of real-world applications, and why this implementation is so useful.



Ryo Miyake (*Undergraduate student, Psychology*)

I learnt more about GIS from this course.



Ran Naing Lin (*Post Graduate, Archaeology*)

The lecture gave us the basis information about GIS and its usefulness. Moreover, Sir introduced the case study with his Sunlight analysis. That helps to get idea how to apply GIS in relevant area.



Carol Mae Buenconsejo Bellen (*Undergraduate student, Geodetic Engineers*)

I have learned about maps as representations of real world. Also, about google maps and its importance and uses like the shortest pathway. I have also learned on broader application of geographic information system as it was used in the heat exposure assessment and the remote sensing approach in the temperature-mortality study. These new learning about the applications of GIS and RS, I can also apply it in our country - analysis and interpretations, especially the use of remote sensing related in the land surface temperature due to climate change.

Research on Digital Earth

Conducted by: Prof. Hiromichi Fukui, **Date:** 12 August 2019



From this course, the participants learned about Digital Earth (DE) and Geo Informatics (GI). The importance of digital earth, GIs and spatial planning is being recognized worldwide. GI, with its ability to integrate various levels of data from many fields is acting as a bridge between various professional disciplines and citizens. Furthermore, they learn about the application

of DE such as Disaster Management, there is an urgent need of the shift to Operational Phase and Emergency Operation System based on DE, Education, and Capacity Building.

Jacob Breslin (*Undergraduate student, Engineering and Built Environment*)



I have learnt about the role of digital earth in promoting a sustainable and resilient society. A key learning for me was the importance of digital earth in assisting with real-time disaster and damage management and reducing disruption, as well as the necessity for a global disaster force. I also learnt about Prof. Hiromichi's extensive research in the Himalayan Range regarding a study on climate change's impact on the Imja glacial lake and the role of geoinformatics in this study.

Vuthlay Phouk (*Undergraduate student, Geo-resources and Geotechnical Engineering*)



From this lecture, we have learned many things about our digital world. We are in an era of technology and with the development of Internet, we will have a more interesting life. I think we can apply our lecture to develop a new way of life which connects much in our digital world.

Ryo Miyake (*Undergraduate student, Psychology*)



I learnt about environment from this course.

Nguyen Kim Thanh (*Post Graduate, Social Sciences and Humanities*)



I learned some new terms: (Digital Earth, Spaceship Earth, Geoengineering), organizations and journals that can be helpful if I continue to work in RS&GIS field.

Ubiquitous Geoinformatics

Conducted by: Prof. Kiyoshi Honda, **Date:** 12 August 2019



The participants learned that the ubiquitous geo-informatics 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 provides the real-time data is the field sensor network, compass camera and UAV.



Martin Luna Juncal (*Undergraduate student, Engineering and Built Environment*)

I learnt about how satellites work to obtain high resolution images, and about the many applications geoinformatics has, and its importance in agriculture.



Ryo Miyake (*Undergraduate student, Psychology*)

I learnt about Ubiquitous Geoinformatics from this course.



Ran Naing Lin (*Post Graduate, Archaeology*)

This lecture picked up how geoinformatics is important for every single sector such as agriculture, Disaster management and etc. I also learned the general idea of earth such as what is radius of earth and satellite such as how it works, where it rotates and etc. Besides, it introduced the new technologies of Agriculture that is going on in developing country. So, I will encourage my friends who are working in agriculture sector to apply those techniques in my country.



Wilawan Robroo (*Undergraduate student, Geographic Information System*)

The use of GIS in agriculture and I will apply to study.

Sensor and Bigdata for Society

Conducted by: Dr. Apichon Wittayangkurn, Date: 13 August 2019



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.



Kota Kakinoki (*Undergraduate student, Environmental Biology*)

I learn about big data. I want use GIS to make map.



Rie Kanai (*Undergraduate student, Society and Media communication*)

I learn utilization of big data and IoT from this course.



Aakash Thapa (*Undergraduate student, Civil and Geomatics Engineering*)

I have learnt that we can connect the devices having sensors to the phone with the help of internet so that we can have a smart life. I also learnt how the numerous data are managed especially with Hadoop. My country is prone to earthquake. So, I would be looking to especially focus on smart buildings so that we can have sensor in it and can detect before the earthquakes and can notify to the people. I think GSM is the perfect platform to notify the people as all the people don't have internet access right at the time.



Nathamon Phanomphongphaisarn (*Master Student, Water Resources Engineering*)

I know what the big data is and how can I deal with it. Moreover, I know more about new technology that can improve our life.

Interferometric Synthetic Aperture Radar (InSAR)

Conducted by: Dr. Salvatore Virdis, Date: 13 August 2019



The participants obtained the basic knowledge and concept about Interferometric Synthetic Aperture Radar or InSAR such as principles of Radar, SAR satellite and sensors and SAR images. Moreover, they learned how to measure phase and interpret displacement of earthquakes.



Rie Kanai (*Undergraduate student, Society and Media communication*)

I learn what is InSAR and that utility method from this course.



Ran Naing Lin (*Post Graduate, Archaeology*)

I learned how to use InSAR for disaster management. Detecting Phase variations of permanent scatter can give the displacement of that. So, we can predate what will happen such collapse. I will definitely do further study for my community. Great Teacher. He did every difficult thing to be simpler. Even though I don't have a background of this, I understood very well.

L. D. C. H. N. Kalpana (*Undergraduate student, Town and Country Planning*)



That's the best lecture I so far attendant in summer school. I have only used the optical remote sensing applications for my studies so far and this knowledge would be essential for my future studies and improve the research accuracy in many aspects. Microwave radiation helps to predict the things with a very high accuracy and this knowledge would be helps to improve my previous research accuracy with the InSAR applications. Therefore, I hope to edit my research with the help of InSAR application and hope to enhance the research accuracy. It's better we can allocate more time for this lecture.

Carol Mae Buenconsejo Bellen (*Undergraduate student, Geodetic Engineers*)



From this course, InSAR (Interferometric Synthetic Aperture Radar) was discussed, from remote sensing, radars, electromagnetic waves and its components - amplitude, wavelength, phase to the use of InSAR to identify and map ground deformations using radar images through the range change (phases) from the permanent structures. Through these learnings, it can be applied to identify the major changes in roads and other structures, old or not to detect the damages present that may cause to accidents in the future. In the philippines, seawalls have been built alongshore since then but due to continuing changes on sea-level together with the sea-surface it may have started to go down that may collapse in the near times, with these InSAR can be used to detect these changes on the sea walls i guess.

Geospatial Technology in Agriculture

Conducted by: Prof. Nitin Kumar Tripathi, **Date:** 13 August 2019



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 case study which is Improving the Accuracy of Aboveground Biomass and Carbon Estimation Using LiDAR Metrics.



Martin Luna Juncal (*Undergraduate student, Engineering and Built Environment*)

I learnt about how RGB wavelengths can be used as predictors for N,P and K nutrients in agricultural zones, which would improve the efficiency of growth rates, making agriculture more profitable.



Kosei Nagato (*Undergraduate student, Environmental Biology*)

A lot of data such as from RS, from GIS, soil data and fields data enhanced profit. I want to collect and use various data to help in agriculture in the desert.



Ran Naing Lin (*Post Graduate, Archaeology*)

I learned the basics terms of Remote Sensing such as special, spectral images, the difference between DSM and DEM. I also got the link where those data are available such as Landsat, IKONOS, Orthophoto, Geogere-1. I also note down some sites about Agriculture index or techniques that will be shared with farmers or community. The lecture picking up two case studies was good. We got idea about how to apply RS for agriculture.



Nguyen Kim Thanh (*Post Graduate, Social Sciences and Humanities*)

Professor has provided great examples of researches about applications of RS&GIS in agriculture. I am interested in his example on monitoring drought, I will plan to do more researches on this subject because the south and central part of Vietnam are now also often suffering from drought.

UAV and Applications

Conducted by: Dr. Sanit Arunplod, **Date:** 14 August 2019



The lecturer presented the definition of UAV and its components, which are platform and sensor. Moreover, the lecture will also give the sample of UAV application.



Jacob Breslin (*Undergraduate student, Engineering and Built Environment*)

I learnt about the different types of UAVs, what is currently in the market and the unique mechanisms and purposes of certain UAVs. I learnt how UAVs can be used and applied in a range of fields, such as archaeology and culture through the modelling of archaeological sites (e.g. temples) before and after disruptive events like earthquakes to help with management.



Vuthlay Phouk (*Undergraduate student, Geo-resources and Geotechnical Engineering*)

We have learned basic and some introduction of UAV and its evolution. Its history is very interesting, and we have learned something new related to these technologies like what we can do with it that related to GIS and Remote sensing. We have seen a lot of its application and we see a lot about the theory of its usage, but we hope that we will see some practice lesson which related to that lecture.



Kosei Nagato (*Undergraduate student, Environmental Biology*)

There are different types of UAV each with its own pros and cons. So, we have to choose the right one. I want to make agriculture easier with UAV.



Rie Kanai (*Undergraduate student, Society and Media communication*)

I learn what is UAV. UAV is one of drone. I will apply to take a photo huge art material.

Mobile Video Processing Platform for Agricultural

Conducted by: Dr. Mathew N. Dailey, Date: 14 August 2019



The participants learned about image processing in the context of Vision Systems. The usefulness 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.

Jacob Breslin (*Undergraduate student, Engineering and Built Environment*)



I learnt about machine vision in agriculture from this course, a concept I have never heard about. I learnt about some of the concepts of AI, such as the need for machines to 'see', the gradient, the data formation of pictures and the role of photographic sensors. I learnt that this could be applied to agriculture, where machine vision can be used to determine crop success and failure (through disease, rate of growth etc.) and how AI forms a pyramid from data to wisdom.

Aakash Thapa (*Undergraduate student, Civil and Geomatics Engineering*)



I have learned how to gather the information to a particular subject and then understand the relationship between input and output to produce a good result. I also learnt about classification and how can we classify the existing things. I will be more interested to in the field of agriculture to find the use of pesticides that will be perfectly fit for the plants.

L. D. C. H. N. Kalpana (*Undergraduate student, Town and Country Planning*)



It introduced really new study area which I didn't familiar early. The particular knowledge can be used for my studies on preparation of mobile platforms for agriculture and transportation planning activities. Further, the particular knowledge can be expanded for the urban planning aspects and land use planning activities such as building orientation modeling and measuring building heights.

Thai Thanh Du (*Graduate master's degree, Land Resources*)



I learned Mobile video processing platform for agricultural.

Smart City and Smart Traffic

Conducted by: Dr. Hiroyuki Miyazaki, **Date:** 14 August 2019



The participants learned about smart society, examples of geospatial technologies contributing to Smart societies (such as supporting technologies for smart transport through GPS and CDR or the call detail record, application of indoor positioning using Bluetooth, application of GNSS for disaster and application of Facebook data for demography mapping). Moreover, this class

learned about challenges in implementation like international development projects, ASEAN connectivity and business development.



Jacob Breslin (*Undergraduate student, Engineering and Built Environment*)

This course I learnt about geospatial technologies for smart society. I learnt about the role of geospatial technology is transport, disaster management and demography mapping. I also learnt about the challenges to implementation and why we have not yet fully achieved smart cities. The range of real-world examples was really impressive!



Carol Mae Buenconsejo Bellen (*Undergraduate student, Geodetic Engineers*)

Geospatial technologies for smart society was tackled in this course. It explained about the localization of a handset in mobile networks, through GPS and CDR or the call detail record. It also showed the wide range application of indoor positioning using Bluetooth. In smart society, these technologies can be contributing to transport, disaster management and demography mapping. These broad applications of these geospatial technologies, it would help me to create possible solutions in one of the main problems in our country, the traffic. It is not just happened in the city but also in the locals. Maybe I could create and locate alternate routes to avoid those traffic hotspots in our area. Our province experience typhoons every month especially on its third and last quarter of the year. With the application of OSM, we can create models that shows where areas are prone to floods and landslides and also locate short routes to possible evacuations centers in case of emergencies.



Wilawan Robroo (*Undergraduate student, Geographic Information System*)

Learn new technologies in Smart City and use it in everyday life.



Thai Thanh Du (*Graduate master's degree, Land Resources*)

I learned Geospatial technologies for smart society.

Hand on: UAV, GNSS Experiment in the Field and Processing

Conducted by: Dr. Sanit Arundplod, Date: 15 August 2019



The lecture shown the UAV flight by the field experiment that using the DIY UAV to capture the image inside AIT. The participants learned about the use of "Mission Planner" which is the open source application for flight planning. Moreover, the participants learned and try to use GPS in the field.

Jacob Breslin (*Undergraduate student, Engineering and Built Environment*)



I have learnt about how UAV is absolutely necessary if we are to understand spatial relationships. I learnt about how UAV can be operated or automated to allow for aerial imagery data, which can be used for orthophotos (for example). I learnt about the functions and mechanisms of drones (specifically the Phantom series) as well as how to operate one in the field. I have learnt about the role of UAV in capturing aerial images and how those images can be used to create a range of products, such as orthophotos or 3D computer models. I also gained the skill of using such software in completing the above tasks. I appreciated the fact that I got to control the UAV, which has also added to my skill sets for use in aerial imagery in future.

Vuthlay Phouk (*Undergraduate student, Geo-resources and Geotechnical Engineering*)



From this course, we have learned that through technology we can do a lot of thing related to spatial information and aerial vehicle. Due to safety concerned and some of others requirements that men can't do, unmanned vehicle was developed and after we know all of this it maybe hard for me to apply in my field but at least I can see the diversity of GIS in a lot more different field. The lecture is likely enough for us to see more aspect about the GIS and I think there are not many things for me to complain about. However, if it is possible, for next time this course should be linked a lab or a field trip respectively so that it would be more easy and better to understand.



Kota Kakinoki (*Undergraduate student, Environmental Biology*)

I learn about how to use UAV. I want to make a map of habitat.

Hand on: UAV Data Processing

Conducted by: Dr. Sanit Arunplod, **Date:** 15 August 2019



For this lab session, the lecturers taught the participants to use “Agisoft photoscan” for processing the UAV image to be 3D model.

Jacob Breslin (*Undergraduate student, Engineering and Built Environment*)



I have learnt about the procedures of how to go from raw aerial data image files (collected from Phantom drone) to a 3D model for use in applications such as Google Earth. I learnt about all the stages and techniques it takes to go from a flat 2D image file into a working model. It was super fascinating and is a skill I can now put down as having performed! I have learnt about the role of UAV in capturing aerial images and how those images can be used to create a range of products, such as orthophotos or 3D computer models. I also gained the skill of using such software in completing the above tasks. I appreciated the fact that I got to control the UAV, which has also added to my skill sets for use in aerial imagery in future.



Kota Kakinoki (*Undergraduate student, Environmental Biology*)

I learn about the process how to make 3D map. I want to make a map of habitat.



Nathamon Phanomphongphaisarn (*Master Student, Water Resources Engineering*)

It was easy to process data which get from UAV and the data was very useful. I wish I can convince my department and my work to study more about this process.



Nguyen Kim Thanh (*Post Graduate, Social Sciences and Humanities*)

I think this is a great hand-on. I learned how to make a 3D model, DEM and orthomosaic from the images. If I have the chance to work with images from UAVs in the future (especially in study about agriculture and urban mapping), I can apply what I've learned today.

Resource Efficiency and Sustainable Cities

Conducted by: Dr. Sohee Minsun Kim, **Date:** 16 August 2019



The lecturer presented about the definition of SCP that refers to sustainable consumption and production. The lecturer also demonstrated the problem on Earth and suggest the solutions. Solutions can be resource efficiency, sustainable production, sustainable consumption, opportunity and ecological footprint. Finally, the lecturer taught about how to calculate the Carbon Footprint.



Vuthlay Phouk (*Undergraduate student, Geo-resources and Geotechnical Engineering*)

After we studied this course, we can evaluate and know exactly the ecosystem service benefit. It is good and we can know how life related to the technology. And in the future as the urban planning enlarges, we can save nature at the same time as developing our civilization. Even though the course sounds a bit strange to our subjects but at least we could see now how things related. I don't have any suggestions for this, and the lecture is quite useful.



Kosei Nagato (*Undergraduate student, Environmental Biology*)

What is a carbon footprint? High emissions of carbon in airplanes and daily life. Furthermore, our current life is far from ideal. I want to do a low-carbon life and research.



Aakash Thapa (*Undergraduate student, Civil and Geomatics Engineering*)

I have learnt about the usage of carbon in different countries. I will try to make people aware of the carbon and will try to make them control the usage of carbon.



L. D. C. H. N. Kalpana (*Undergraduate student, Town and Country Planning*)

It's really interesting lecture and I learned regarding resource efficiency and sustainable measure on urban planning. Further, I learned how to calculate the Carbon Footprint calculation, and this would be really efficient for my future urban planning purposes. I really enjoyed the lecture.

Carol Mae Buenconsejo Bellen (*Undergraduate student, Geodetic Engineers*)



The lecture was all about resource efficiency and sustainable cities. Sustainable goal development has 17 goals and 169 targets on environmental economic aspects. It focuses on how much the earth can regenerate not on how much it can provide. The main problem is that we only have one Earth and there's an no proportionate demand. Solutions can be resource efficiency, sustainable consumption and development, sustainable consumption, sustainable production, opportunity and ecological footprint. These solutions cover how to handle the current situations of the earth especially on things that would make earth a lot more damaged and slowly failing. With this lecture, I became more aware of the society I'm living. We should reduce the use of things that may trigger the emission of carbon dioxide into the air. Do recycling. People should be more conscious on how to change their usual things, be wiser on what things to buy and how these would be discarded. We should speak louder for the business sectors could hear us about on how they are going to manage their product and process for it to last longer.

Global Climate Change Impact and Water Resource

Conducted by: Dr. Sangum Shrestha, **Date:** 16 August 2019



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 will be presented. Thirdly, the lecturer shown 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 are highlighted to show the research on future climate scenarios.



Kosei Nagato (*Undergraduate student, Environmental Biology*)

Our water resources are very few and limited. Climate change causes various environmental issues, such as Article ice melting, drought and sea level rise. We should recycle water.



Wilawan Robroo (*Undergraduate student, Geographic Information System*)

Learn to manage the use of sustainable water resources and will be used in everyday life. I think I want to learn more.

Carol Mae Buenconsejo Bellen (*Undergraduate student, Geodetic Engineers*)



Climate change and water management challenges and possible solutions were tackled on this course. Water availability is one of the problems. Water can be used for agriculture, industry, and domestic. Population growth and climate change are one of the main problems encountered in the management of water resources caused by the enhanced greenhouse gas effect. These challenges may lead to changes in precipitation and drought, changes in the water condition and also may lead to sea level rise. To overcome these problems, people must be able to cope up with the changes, and one of those is the adaptation. We can build water resources infrastructures, but we can also increase awareness of the people living in certain place with education. We must implement or do some practices that may lead to reduction in demand of water. We could also support government policies with their projects in relation to water supply and demand.

Nguyen Kim Thanh (*Post Graduate, Social Sciences and Humanities*)



I have more awareness of our problems that related to water as well as climate change impacts on water resources. Dr. Shrestha have also well explained and introduced some climate change terms (greenhouse gas effect, climate modeling and ways to adapt to climate change). This course inspires me to do more research about how climate change impacts water resources in Vietnam.



Thai Thanh Du (*Graduate master's degree, Land Resources*)

I learned Water availability and water management challenges; The impact of climate change on water supplies

Interoperable Geoinformatics & Location Base Service

Conducted by: Dr. Sarawut NinSawat, Date: 16 August 2019



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.



Martin Luna Juncal (*Undergraduate student, Engineering and Built Environment*)

I have learnt more about remote sensing, and how widespread the applications of AR are. I have also learnt about Dr.Sawawut's research, which I think is very important and can have significant global benefits.



Kosei Nagato (*Undergraduate student, Environmental Biology*)

AR is a technology with various possibilities. In the near future, various types of information may be displayed on glasses-type devices



Rie Kanai (*Undergraduate student, Society and Media communication*)

I learn practical example of ubiquitous computing and LBS. importance of image and make new technology.

L. D. C. H. N. Kalpana (*Undergraduate student, Town and Country Planning*)



It's really enlightened me regarding the new geo informatics application and location-based services for the sustainable development practices. This lecture helps to get the overall understanding of the geo informatics and its valuable uses in disaster risk reduction, hazard mapping and real time services for the disaster management. Further the lecture discussed the highest and best practices of geo informatics and how we should use this knowledge for the better future. This knowledge would be essential for my career an urban planner and improve my research focus on geo informatics. It's really interesting lecture and I really enjoyed it. Thank You.

Renewable Energy Resource and Technologies

Conducted by: Prof. Sivanappan Kumar, Date: 21 August 2019



From this course, the participants learned the perspectives on sustainable development such as importance, meaning and what we are doing about it. Furthermore, the participants also learned the role of energy in sustainable development and case studies on how energy can promote sustainable development in various communities.



Ran Naing Lin (*Post Graduate, Archaeology*)

We learned how solar energy is important to be a sustainable development. I learn about the reasons why people need sustainable development.



Wilawan Robroo (*Undergraduate student, Geographic Information System*)

Learn how to use energy to achieve sustainability. I will apply it in everyday life.



Nathamon Phanomphongphaisarn (*Master Student, Water Resources Engineering*)

I have learnt about the indicators of sustainable development and energy which is the socio-economic and the earth system indicators. The major issues that we are facing now is climate change, poverty and lack of economic opportunity and employment.



Nguyen Kim Thanh (*Post Graduate, Social Sciences and Humanities*)

I have learned more about the issues with related to using natural resources with have caused environment degradation, so we have to promote sustainable development in which energy is a key. The professor has provided 3 examples of sustainable energy at 3 different scales (institution, village and country) that I think maybe I can share the ideas when I come back to Vietnam.

Smart Farm Initiative in Thailand

Conducted by: Pisut Paiboonrat, Date: 21 August 2019



The participants learned about the smart agriculture project in Thailand. The lecturer starts 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 What2 Grow” 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.



Kota Kakinoki (*Undergraduate student, Environmental Biology*)

I learn about agriculture. I want to be a farmer who has knowledge.



Ran Naing Lin (*Post Graduate, Archaeology*)

This course picks up real life of works between IT and agriculture. I think this course is good.



L. D. C. H. N. Kalpana (*Undergraduate student, Town and Country Planning*)

It was quite different lecture and application of the new technology to make the agricultural product in a sustainable way. These applications would be really essentials for my future research applications and studies on smart farming and geo informatics.



Nathamon Phanomphongphaisarn (*Master Student, Water Resources Engineering*)

I have learnt about smart farming. We can increase the benefit of product by include technology in crop planting. The technician and new generation of farmer should show and share the knowhow of smart farm to traditional farmer in order to gain more money.

Economic Values of Ecosystem Services: Overview of Asia

Conducted by: Dr. Takuji W. Tsusaka, Date: 21 August 2019



The lecturer explained about social capital and social behavior. In addition, the lecturer provided a study about social capital spillover using spatial regression methods.



Martin Luna Juncal (*Undergraduate student, Engineering and Built Environment*)

This was a very interesting course where I learnt about how GIS can apply to human psychology and different behaviors.



Vuthlay Phouk (*Undergraduate student, Geo-resources and Geotechnical Engineering*)

After we studied this course, we can evaluate and know exactly the ecosystem service benefit. It is good and we can know how life related to the technology. And in the future as the urban planning enlarges, we can save nature at the same time as developing our civilization. Even though the course sounds a bit strange to our subjects but at least we could see now how things related. I don't have any suggestions for this, and the lecture is quite useful.



Aakash Thapa (*Undergraduate student, Civil and Geomatics Engineering*)

I have learnt about the indicator of social behavior and how that will affect the community. I would try to understand the social behavior of all the people in the community and use it to do some projects. I enjoyed the lecture, but the mathematical equations were not explained well.



Carol Mae Buenconsejo Bellen (*Undergraduate student, Geodetic Engineers*)

I have learned a study on social capital spillover using spatial regression method. Social capital can be on economic growth and poverty reduction. It can be based on social behavior, social network, social relationship, transaction cost and collective action. It was nice lecture.

Use of Google Earth Engine in Studying Land Use and Land Coverage Changes

Conducted by: Dr. Nophea Sasaki, Date: 21 August 2019



The lecturer presented about using Google Earth Engine for natural resources management and application in studying land use and land cover changes. Also, the participants learned how to calculate enhanced vegetation index (EVI).



Ryo Miyake (*Undergraduate student, Psychology*)

I learnt how to use Google Earth Engine from this course.



Carol Mae Buenconsejo Bellen (*Undergraduate student, Geodetic Engineers*)

In this lecture I have learned about a study using google earth engine for studying land use and land cover changes. It tackled about how this engine would help in analyzing data using remote sensing methods and the climate mitigation that leads to domestic measures.



Nathamon Phanomphongphaisarn (*Master Student, Water Resources Engineering*)

I have learnt about GEE can studying land use and land cover changes. I will try to use this method to identify land use and land cover change in Thailand. This course is interesting.



Nguyen Kim Thanh (*Post Graduate, Social Sciences and Humanities*)

Dr. Nophea Sasaki and Manjunatha Venkatappa has introduced the study about using Google Earth Engine for studying Land Use and Land Cover Changes, which is very interesting to me as I want to learn more about GEE to use it for my researches in the future. I will definitely read the paper in Remote sensing magazine to understand more about their work.

Hand on: Crowd sourcing for Geospatial data (OSM)

Conducted by: Dr. Sarawut Ninsawat, Date: 22 August 2019

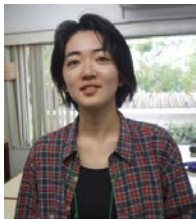


The participants learned about background of OpenStreetMap (OSM) which are definition of OSM, policy, data source of OSM, data collections and data management of OSM.



Martin Luna Juncal (*Undergraduate student, Engineering and Built Environment*)

I learnt about crowdsourced geospatial data and how it can be applied to research projects to make work easier by using open source data. I also learnt about QGIS and its basic applications.



Rie Kanai (*Undergraduate student, Society and Media communication*)

How to make a map such as google map. I will apply to make more rapidly and convenient map or other application.



L. D. C. H. N. Kalpana (*Undergraduate student, Town and Country Planning*)

It was really interesting lecture regarding the field survey and the Open Data. This knowledge would be very important for the urban simulation and transpiration analysis. Further, this method would be essential for my research purposes and develop web base application using open data. It was one of the most interesting lecture and I really enjoyed it. Thank You very much.



Thai Thanh Du (*Graduate master's degree, Land Resources*)

I was learned how to create a location in Openstreetmap and how to use QGIS to give decision. Apply in my research in the future.

Hand on: Geospatial Analysis using Free Open Sources Software (FOSS)

Conducted by: Dr. Sarawut Ninsawat, Date: 22 August 2019



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 get chance to use QGIS software to understand GIS applications and solve sample problem (dataset) using analysis tools.

Vuthlay Phouk (*Undergraduate student, Geo-resources and Geotechnical Engineering*)



After we study this course, we know more about the software that we can use to apply our geospatial data. Some of the software needs license and we will be paid a lot of money for that. However, after learning this course we can now use some free app to do the same work with less feature but still useful. The lecturer explains us really well and we got a lot of experience from him. I like the course design and most importantly as I said there is a lab following the lecture.

Kosei Nagato (*Undergraduate student, Environmental Biology*)



How to use QGIS. Use QGIS to make information easier to read.

Aakash Thapa (*Undergraduate student, Civil and Geomatics Engineering*)



We have learnt about the Quantum GIS and how to use it. I will be doing different projects regarding suitability analysis and this lecture will be very helpful for that reason. The lecture was interesting and perfect.

Wilawan Robroo (*Undergraduate student, Geographic Information System*)



Learn about the principles of using QGIS programs and selecting data from certain conditions. I will apply to study.

8. Comments on Field Trip

Khao Hin Sorn Royal Project and Development

Date: 17 August 2019



His Majesty the King has established this study center since 1979. It focuses on novel agricultural developments facilitated by the cooperation of public and private sectors. The large plot of land was once barren, but with the development of water sources, forest conditions, land and animal husbandry, the area has been completely transformed. Now the area serves as a model and an example for development for other

areas. Experiments in agriculture as well as demonstration plots are available to visitors and farmers looking to learn.



Jacob Breslin (*Undergraduate student, Engineering and Built Environment*)

I learnt extensively about the history behind Thailand's development of the agricultural industry. It was very fascinating to learn about how the previous King was so encouraging of promoting agriculture, which has led to great transformation for the livability of many Thai communities. I also saw and learned about the many types of plantations that exist on the property, and how they are all generating to farmers livelihood.



Ran Naing Lin (*Post Graduate, Archaeology*)

It is very impressive that how the king helped the farmers. The way they shared the knowledge of agriculture with farmers in the Khao Hin Sorn Royal Development Student Center is very thoughtful. I also learned about King Bhumibol Adulyadej. It is very good.



Nathamon Phanomphongphaisarn (*Master Student, Water Resources Engineering*)

I know more about agricultural new theory of King Rama 9 and organic theory. They are great theory that can recovery bad soil to good soil.

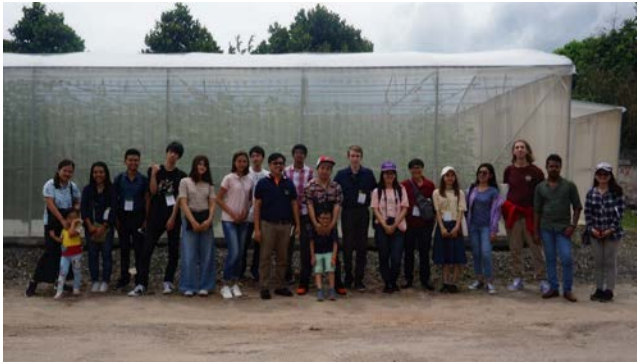


Thai Thanh Du (*Graduate master's degree, Land Resources*)

I knew the process of establishment and development of Khao Hin Sorn Development Study Center.

LomSook Farm

Date: 17 August 2019



This farm owner is Mr. Chatchai Lomsook-wattana who is interested in melon and smart farming system. Melons are planted in close system (greenhouse). The farm is controlled using smart farming system such as watering, fertilization and monitoring of the melon growing factors (e.g., light, humidity and temperature). Moreover, their productions are warranted by GAP standard.

Jacob Breslin (*Undergraduate student, Engineering and Built Environment*)



I have learned much about the new, innovative techniques that young farmers are using to increasing output and system efficiency. For example, I learned about the use of mobile phones to remotely control the application of water and fertilizer to improve growth schedules, as well as the use of real-time footage that can be used to view plant growth. It was fascinating to learn about how crops can grow so successfully within such small spaces, and that lots of land is not always needed for successful crop growth. I really enjoyed this experience, and it has actually inspired some work that I plan to mention to my supervisor in Australia about bringing smart farms and incorporating them into a social enterprise.



Kota Kakinoki (*Undergraduate student, Environmental Biology*)

I learn about the usefulness about GIS for agriculture.



Aakash Thapa (*Undergraduate student, Civil and Geomatics Engineering*)

I have learnt that how can the workers do their work easily in farm and learnt the technique which looks effective and should try in my country as well. I got lot of knowledge from this field trip.



Nguyen Kim Thanh (*Post Graduate, Social Sciences and Humanities*)

It was great to learn about how technology is applied in agriculture and increase production and profits of farmers. It was interesting to see how he make fertilizer from earthworms and I was impressed by how he controls water, fertilizer, temperature and humidity in the green house by mobile application.

Golden Jubilee Museum of Agriculture

Date: 18 August 2019



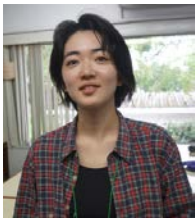
This museum is the learning tourist attraction, which have both of indoor and outdoor museums. The participants have the chance to observe at “The King Loves Us Museum”. This museum shows the talents of His Majesty the King in agriculture, royal rituals related to agriculture. Moreover, the museum also 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.



Martin Luna Juncal (*Undergraduate student, Engineering and Built Environment*)

I learnt that the king had a significant influence on the agricultural development of Thailand. I also learnt about how unique Thai agriculture is and how impactful it is to the lives of citizens.



Rie Kanai (*Undergraduate student, Society and Media communication*)

From this field trip, I learn about King's feat, and relationship between Thai and agriculture.



Carol Mae Buenconsejo Bellen (*Undergraduate student, Geodetic Engineers*)

What I learned is that it's the place said to be collecting information on the royal agricultural projects and is the museum of agricultural innovations from ancient times to the present. I was able to encounter agricultural learning, witness their ancient way of living, see photographs and paintings that show their culture and the agricultural innovation centers. From the three-dimensional viewing, I was able to see how they adapt, survive and improve their agriculture from the drought that Thailand experienced years ago. It also showed how they help the local farmers improve their way of farming to make it easier and convenient.



L. D. C. H. N. Kalpana (*Undergraduate student, Town and Country Planning*)

It was a really great experience to me to been with the agricultural farm which has good experience regarding the farming and culturally specific agricultural uses. It had helped me to learn the evolution of agriculture related to the different countries' aspects and modes of farming. The particular knowledge helped me to enhance my understanding regarding the agriculture and community development.

PASCO (Thailand) Co., Ltd.

Date: 19 August 2019



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.



Vuthlay Phouk (*Undergraduate student, Geo-resources and Geotechnical Engineering*)

PASCO is a great place for getting experience in GIS and Remote Sensing. There are plenty of expertise and I learned a lot of things there. Getting new experiences is always what we learned from there. As what I have seen there and listened to the presentation, everything is going fine and I really enjoy the field trip. I don't have any suggestions and I expect that I will come to this place again.



Kosei Nagato (*Undergraduate student, Environmental Biology*)

I was able to understand what I was learning now by looking at the 3D mapping workplace.



Ryo Miyake (*Undergraduate student, Psychology*)

I learnt about how to make 3D map.



L. D. C. H. N. Kalpana (*Undergraduate student, Town and Country Planning*)

It was a really great experience to me that knowing how geoinformatics industry work and what are the learning outcomes of our academics when compared to the academic learning. In there I experienced the modern remote sensing application related to the country's sustainable development and disaster risk reduction and forecasting. It was really great experience to me.

Bang Krachao, Samut Prakan

Date: 19 August 2019



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.

Vuthlay Phouk (*Undergraduate student, Geo-resources and Geotechnical Engineering*)



Bang Kachao is a beautiful place. I got a lot of new experiences as we could take our hand making our own design for the T-shirt is the most memorable thing. It is the same that we can see the application of GIS and Remote Sensing in real life but most importantly, we could have a lot of souvenirs there. The staff are friendly, kind and helpful and there is not any to complain about. I love the view, the environment, the atmosphere there and we do love it and I expect the same thing that one day we will go there again.

Ran Naing Lin (*Post Graduate, Archaeology*)



We did our own paint on clothes. It is also about how people build business with their own tangible culture. It was good.

Carol Mae Buenconsejo Bellen (*Undergraduate student, Geodetic Engineers*)



Experiencing this kind of activity, dyeing the clothes cannot be just a recreation and for gaining knowledge but also can be a business and be of help to every Baantooop community. Using natural herbs to create these colorful clothings is really amazing. It was fun.

Thai Thanh Du (*Graduate master's degree, Land Resources*)



I know an interesting tourist destination in Thailand and know how to create patterns on the shirt.

GISTDA Sriracha

Date: 20 August 2019



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.



Martin Luna Juncal (*Undergraduate student, Engineering and Built Environment*)

I learnt about the way Theos functions and how important the satellite is to disaster management, mapping and client information. I also learnt a bit more about the technology that is used for satellite information and GIS positioning.



Aakash Thapa (*Undergraduate student, Civil and Geomatics Engineering*)

I have learnt about the control system the satellite system and how they are connected so that satellites are monitored. I would be more happy if this field more interactive during the presentation.



Wilawan Robroo (*Undergraduate student, Geographic Information System*)

Learned about many space technologies and the working principle of satellites.

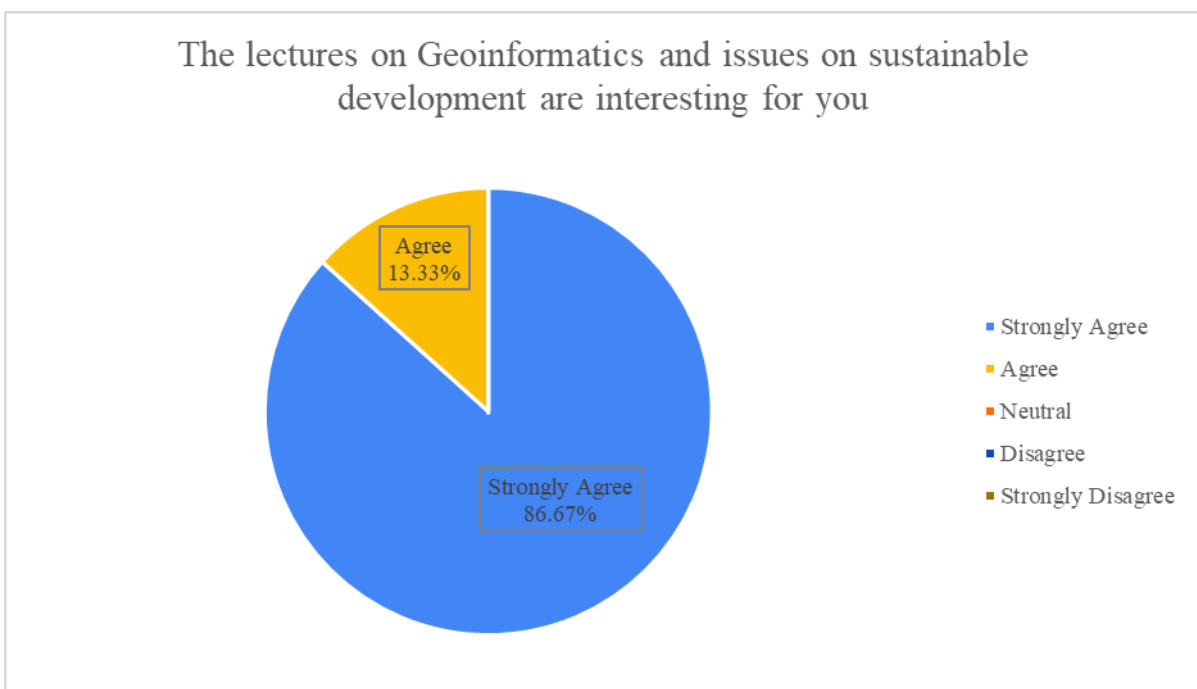
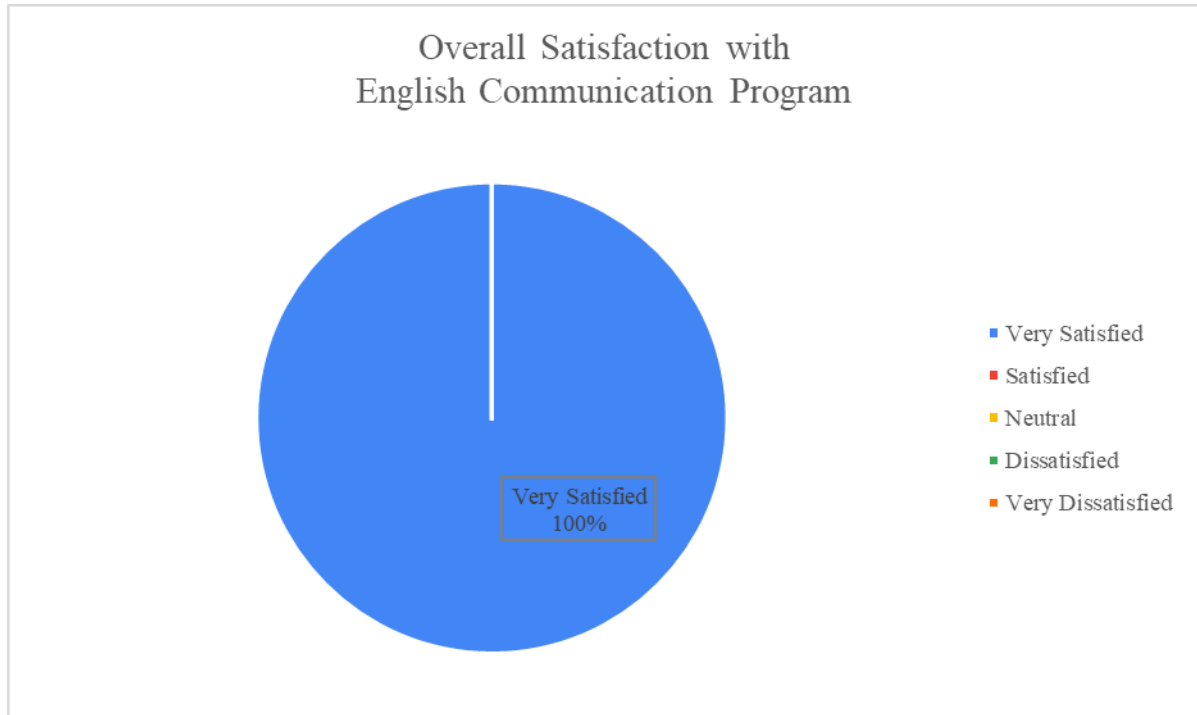


Nguyen Kim Thanh (*Post Graduate, Social Sciences and Humanities*)

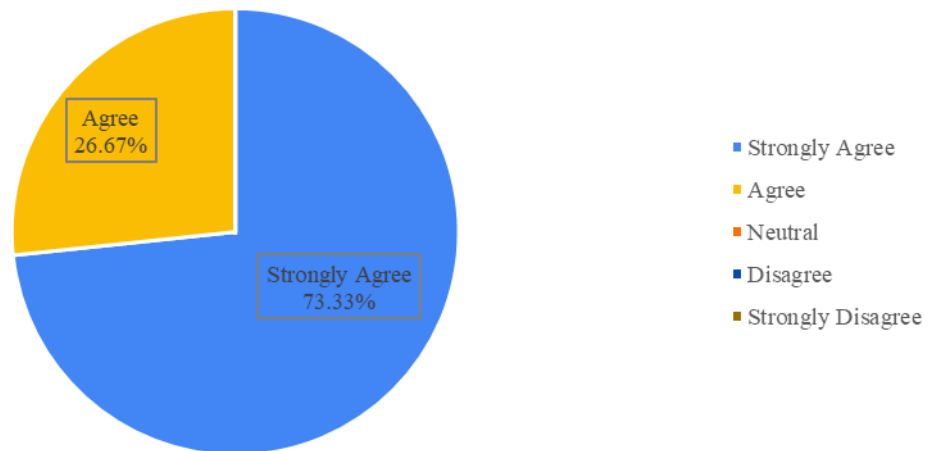
It was interesting to be introduced about how a space agency like GISTDA works, from launching and controlling the satellite, to acquisition the satellites images and their products. Space Inspirium is a great museum that provide large and basic information about space science (ex: astronomy) and space technology (ex: satellite technology), which will help bring space research closer to the people and inspire young people who have interests in this field.

9. Program Evaluation

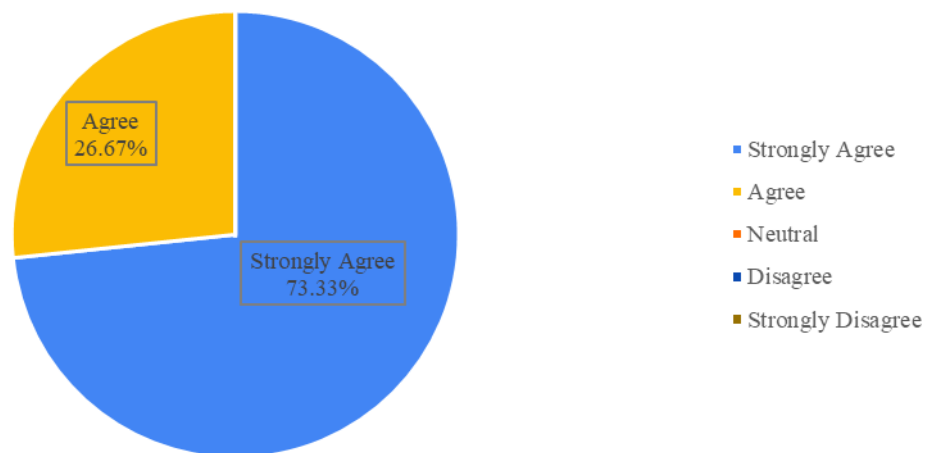
In this program, the evaluation forms were prepared for receiving feedbacks from participants in order to evaluate the program and identify weak point for improving further. The results from the first part are displayed as the pie charts below.



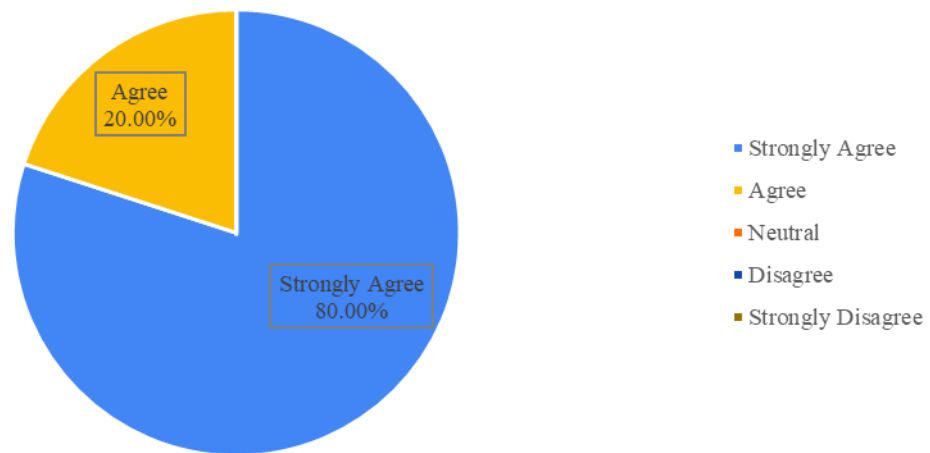
Lecturers are specialist in his/her career, which help you meet the learning needs in this program



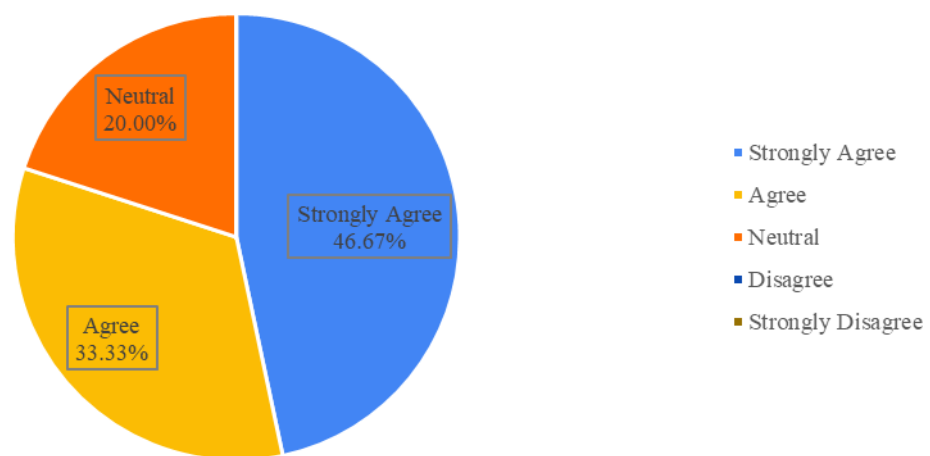
Lecture materials, facilities, equipment and supplies were appropriate for the program



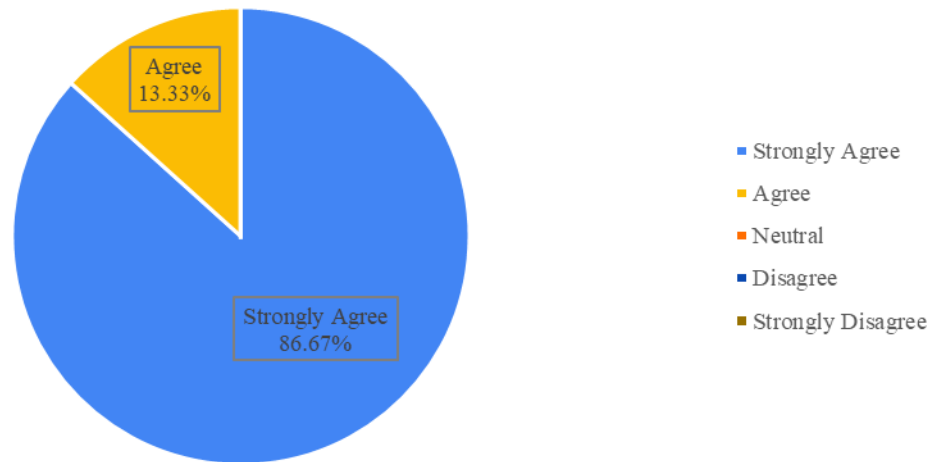
Hand on in OpenSource (QGIS), UAV and GPS-GNSS are improved your technical Geoinformatics skill



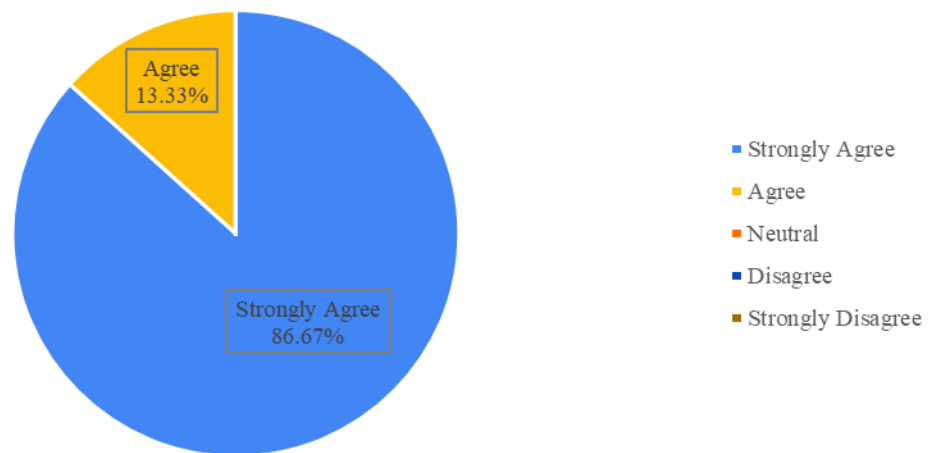
The amount of lecture classes, study hours or time dedicated to academic learning were sufficient for you



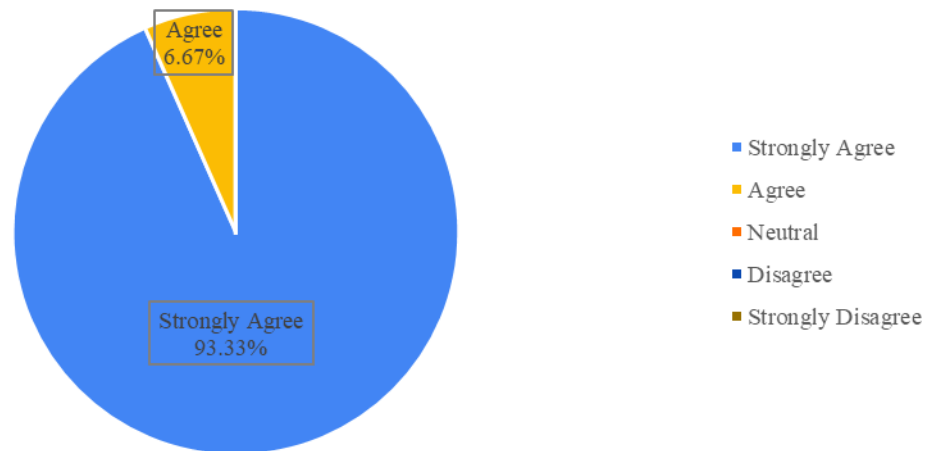
Visiting Geoinformatics organizations (government & private sectors)
are good opportunity to learn and build capacity for you



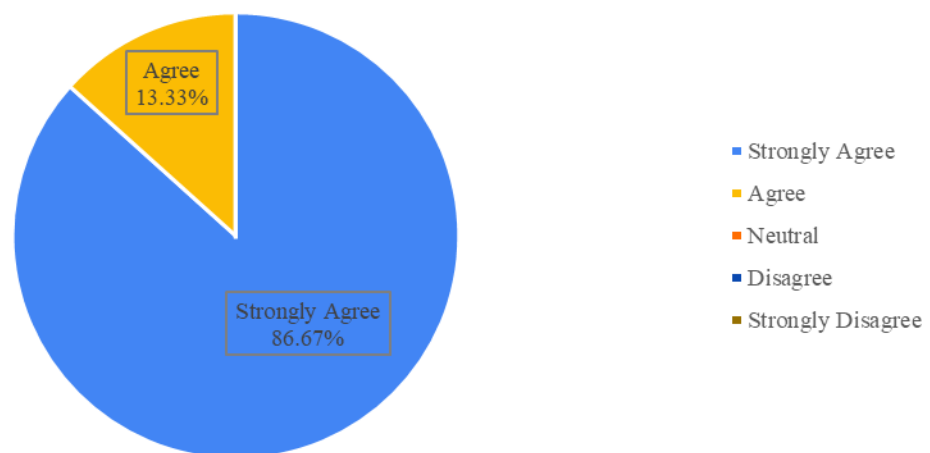
Accommodation at Sirindhorn Science Home (SSH) is
comfortable and safe for you



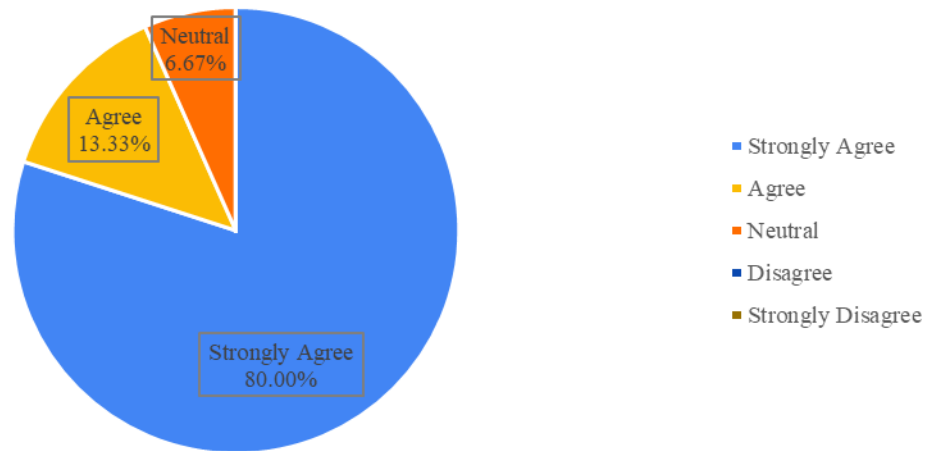
You are happy with the choice of curricular and extracurricular activities during this program



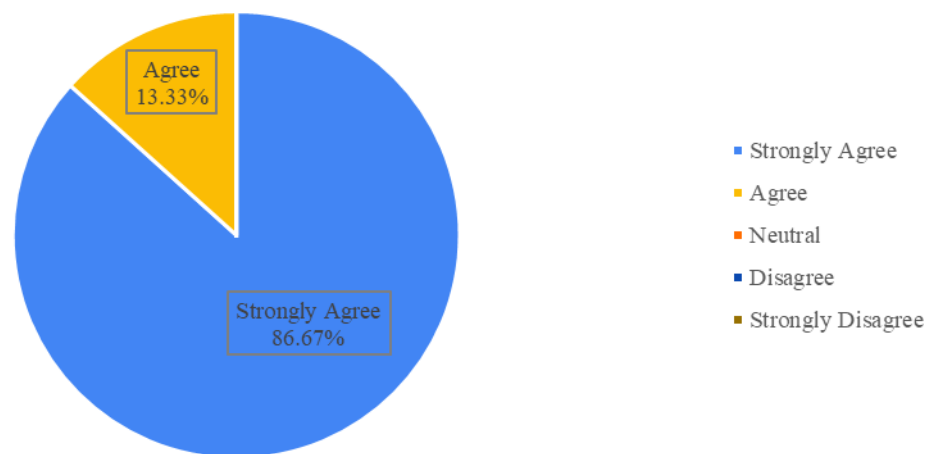
You learned the local culture through local life style like places, food, people, etc.



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



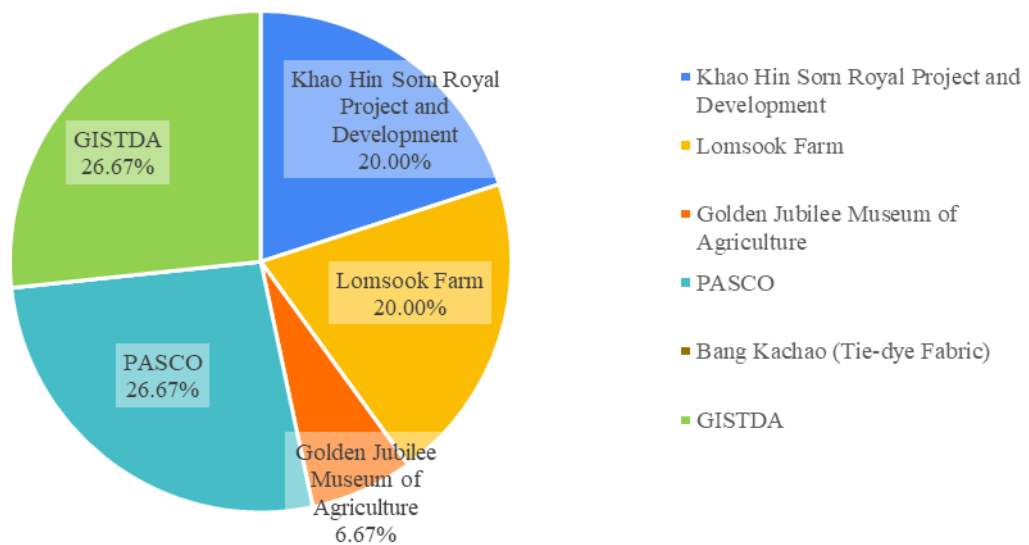
This program is good chance to obtain experience in multicultural environment



Overall, please rate your satisfaction score for the Summer School in Bangkok 2019 program



Top rank preferable field visit



The second part shows suggestions from participants as follows.

- ❖ This was a great experience and I'm thankful for being invited to this program. It was very fun, and I learnt a lot!
- ❖ I think getting out on the field makes it easier to talk to friends.
- ❖ It was a privilege to participate in this kind of event.

- ❖ I love this program.
- ❖ I don't have any complain for this summer school but I really happy to be here and I really enjoy this summer with another friends that came from another country.
- ❖ Very fun.
- ❖ I loved this program so much, and I loved everyone involved. Thank you so much for everything <3
- ❖ I convey my sincere thanks for all the members who organized this opportunity and nice pleasant environment for us. Sincere thanks for the Fah and Thee for their dedication and commitment on us 24/7.
- ❖ Thank you for all things. Actually, I worried about long stay in Thailand. But everyone was taking care us. My stay in Thailand become very comfortable, very safety and nice experience. Thank you so much.
- ❖ Thank you for giving me the opportunity to make friends with foreign people.
- ❖ I'm very honored to be this part of this program and got so much to learn. I'm very satisfied with the lectures and field visits I had. Thank you very much.
- ❖ I did enjoy the program. I learned really a lot there for further study. It was a good chance for us to practice UAV flying and data process during the program. But I wish we should also have tried Q-GIS a bit more detail. May be 2 or 3 days for that. :-) :-)
Thank you very much.
- ❖ Overall, I think Asian Summer School is a great program because it provides us not only knowledge on various subjects but also an environment that we can exchange with friends from different countries.

10. Conclusion and Recommendation

The Asian Summer School in Bangkok 2019 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 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, Sports in free time and field trips in Bangkok, Chachoengsao and Chonburi province to build a good relationship with each other.

According to the result of program evaluation, 100% 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 of 4 to 5. The participants mentioned that they are very satisfied with the

choice of curricular and extracurricular activities during the camp, since the statement had the highest voted score.

Anyway, there were some suggestions from participants obtained from program evaluation. Mostly, participants mentioned that they gain knowledge, friendship and new experiences from Asian Summer School 2019 program. Some student mentioned that it is easier and has a higher chance to make friend, share ideas and exchange knowledge by getting out on the field. Some students expressed their enjoyment and thankfulness from participated the camp. Some participants stated that QGIS part is interesting, the program should provide more hands-on classes and more detailed of QGIS.

For the lecture classes, some participant mentioned that the lectures should give some practices to participants how to analyst in some lectures. Some suggested to have group discussion to gather the idea since they came from different countries and different fields, it was a good chance of sharing the idea and knowledge from each specific field. Many participants stated that the less paper lecture, more explanation and more example would be better. Giving participants more example will create better understanding of the whole course and they can certainly apply in their specific skill.

Furthermore, some participants commented about the lecture material or handout. Some participant wanted softcopy of course materials and some participant complain that some lectures did not provide the lecture material. The organizers solve this problem by uploading the electronic version of material and send 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.

For visiting Geoinformatics organizations (government and private sectors), the participants strongly agree to get a good opportunity to learn and build capacity. However, some of the participants stated that the visiting time for each location should be longer to explore for more information. Furthermore, the participants need more detailed information from the places visited for their further study. Some participants mentioned the good English communication skill presenters of some organizations are needed, for the better understanding of the participants. Additionally, from organizers views, after the long days of field visits, the participants appeared to be obviously tired. This happened since the unarrangeable of the time slot for field visiting and the long distance travelled to another province.

For accommodation, there is no complain from the participants about the accommodation (Sirindhorn Science Home) and most of the participants (86.67%) voted in the evaluation form that the accommodation is very comfortable and safe. For food, the organizer tried to provide food for multicultural as much as possible. However, there was a participant who was Gluten Allergy. The organizer managed the requirement of the participant by providing non-gluten meals and giving food ingredient information to prevent him from consuming gluten-included food. Some participants mentioned that the lunch time and break time were very short. Lunch time was very limited within an hour, and sometimes it was only 45 minutes since the morning section was late. Longer lunch time and break time would be more comfortable for the participants. In addition, the requirement about the spicy or non-spicy food should be added to the registration form.

In summary, the main purpose of the program was achieved, the participants could gain experience and knowledge related to GIS for sustainable development. From the program evaluation, most of the participants were very satisfied with the Asian Summer School 2019. The English communication skill of some of the participants was greatly developed during the program. Some participants could communicate better, and their final presentation skill was obviously better from the beginning of the camp. According to assignments given, the participants could give interesting answers with their deep understanding and inspiration from each lecture. Also, this program could effectively motivate the participants to gain more enthusiasm for exploring knowledge in RS-GIS and pursue a higher education level in AIT or other colleges. 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

14 August 2019



Lectures

12-22 August 2019



Self-Introduction Presentation

12 August 2019



Relax Time: Welcome Party with GIS & Remote Sensing Students

17 August 2019



Khao Hin Sorn Royal Development Study Center

17 August 2019



Lomsook Farm

17 August 2019



The Golden jubilee Museum of Agriculture Office

18 August 2019



PASCO (Thailand) Co., Ltd.

19 August 2019



Bang Krachao

19 August 2019



Geo-Informatics and Space Technology Development Agency (GISTDA) Sriracha and Space Inspirium

20 August 2019



Hand on: UAV experiment in the field and processing

15 August 2019



Hand on: Crowd sourcing for Geospatial data (OSM)

22 August 2019



Hand on: Geospatial Analysis using FOSS

22 August 2019



Relax Time, Pizza Party

21-22 August 2019



Individual Presentation & Closing Ceremony

23 August 2019

