

SUSTAINABILITY REPORT

2018-2019



KING MONGKUT'S INSTITUTE OF TECHNOLOGY LADKRABANG



KMITL



BEYOND THE LIMIT

**Sustainability
Report 2018-2019**



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"Understanding, Loving, and Unity" King Bhumibol Adulyadej's Work Philosophy

Ever since his coronation day, **His Majesty King Bhumibol Adulyadej** selflessly devoted his time and effort to the wellbeing and welfare of the Thai people to fulfill his inaugural royal pledge given on 5 May 1950:

"I shall reign with righteousness, for the benefit and happiness of the Siamese [Thai] people."

During his reign, His Majesty tirelessly devoted himself solving the suffering of people across the country, regardless of their nationality or religion. He improved the quality of life for the Thai people in the areas of public health, education, basic public utilities, agriculture, natural resources and environmental restorations, and even the traffic. His Majesty's philosophy of sufficiency economy provided guidance to enable people to live happily and self-sufficiently.

His Majesty the King's work philosophies had emphasized the middle path that was in harmony with the surroundings and practical for producing results that benefited Thai people.

One of His Majesty's work philosophies was "understanding, loving, and unity." His Majesty had continuously stressed "understanding, loving, and unity" in his royal speeches. These three words have deep values and meanings that are applicable across time and place.

Whereas:

Understanding means that before we do something, we must first understand what it is we are about to do. We must understand all the factors involved, the problem, and how to solve the problem.

Loving means that once we have fully understood what we are about to do, we must love to commit ourselves to solve that problem.

Unity means that we should always keep in mind that one cannot work alone. We must work together as a team and help each other to be able to solve a problem.

His Majesty King Bhumibol Adulyadej also gave royal speeches that touched upon this topic on different occasions.

"Unity means that we must reconcile conflicts between each other and use peaceful means to find solutions for unity [which] is the greatest strength of a group and community."

His Majesty the King's royal speech given to farmers of the model village, Thai- Israel Project, Phetchaburi on 25 May 1970

"Unity means mutual consideration and understanding. On personal and professional levels, we must show consideration and understanding that each person has a different duty and expertises and those good results cannot be produced by a single person."

His Majesty the King's royal speech given to the Surasee Remembrance Event Committee at Chitralada Royal Villa on 21 March 1979

"Unity is an important virtue that a group or community of people should possess and maintain for every communal tasks and missions [which] requires everyone in the group or community to participate."

His Majesty the King's royal speech given to the audience of well-wishers on the occasion of the Royal Birthday Anniversary on 5 December 1987

"Unity and reconciliation do not mean that everyone needs to act and think the same. Besides, that would make life become meaningless. Each and every one of us is unique but we must work in harmony despite disagreement."

His Majesty the King's royal speech given to the audience on the occasion of the Royal Birthday Anniversary at Dusidalai Hall on 4 December 1993



His Majesty King Maha Vajiralongkorn **has diligently studied King Bhumibol's work philosophies. After he ascended the throne, he committed to continuing and further developing the royal initiatives created by His Majesty King Bhumibol to benefit the Thai people,** as he made the inaugural royal pledge that:

"I shall continue, preserve, and build upon the royal legacy, and shall reign with righteousness for the benefit and happiness of the people forever"

His Majesty King Maha Vajiralongkorn's inaugural royal pledge

Royal speeches and addresses of His Majesty King Maha Vajiralongkorn given to the Thai audience on various occasions before and after his ascension to the throne were as follows:

"Advanced education is the key of being prosperity of the nation, as whilst university graduates are an important force in applying knowledges practically to produce results. All graduates should be aware of this fact and strive to perform their work wholeheartedly, rationally, and honestly. Most importantly, they must do their utmost to apply education knowledges that they have diligently studied to real-world situations to produce concrete

results and benefit the society at large as much as possible for the prosperity of our nation."

His Majesty the King's royal speech given at the graduation ceremony of King Mongkut's Institute of Technology Thonburi at Suan Ambhorn on Saturday 18 October 1997

"A society cannot be sustained without mutually beneficial relationship. Everyone living together in a society is both recipient and beneficiary. Graduates, as part of a society and as an educated people, should act in a way that benefits a society at all times."

His Majesty the King's royal speech given at the graduation ceremony of Rajabhat University at Suan Ambhorn on 11 March 2007

"Civil service is the work of a government, which directly affects the interest of the nation and its people. Hence, civil servants must genuinely understand the importance of their duties and responsibilities and work together with perseverance, selflessness, and honesty for the benefit of the work as priority. Thus every aspect of the government's work would achieve the desired result of true and sustainable prosperity of the nation and its people."

His Majesty the King's royal speech given to the civil servants on the occasion of Civil Service Day on 1 April 2017



King Bhumibol Adulyadej and King Mongkut's Institute of Technology Ladkrabang

King Bhumibol Adulyadej was the ninth monarch of Thailand from the Chakri Dynasty. Since his accession to the throne on the 9th of June 1946, His Majesty devoted his time and effort to the well-being and happiness of the Thai people with great wisdom and perseverance.

His Majesty initiated countless royal projects and initiatives to alleviate the poor and improve the life of Thai people across Thailand, even in the most remote areas.

Although most of these royal projects and initiatives were related to the problem of natural resources, His Majesty the King did not neglect other problems facing Thai people, such as education, medicine, public health, sports, music, painting, communication, and information technology.

After he ascended the throne, His Majesty was determined to develop Thailand into an civilized country, which required important conditions such as basic utility development and human resource development. Therefore, His Majesty The King began and continued to lay the foundation for education to develop human resources that become an important force for national development. Educational institutions have been established across Thailand since the National Economic and Social Development Plan in 1963 to develop human resources, both laborers and specialists, for the industrial sector and to produce personnel with scientific and technological knowledge able to develop their own technologies. The Nonthaburi Telecommunications Training Center was established in 1960 under the Ministry of Education to produce personnel with communication and telecommunication skills. During the first National Economic and Social Development Plan, the center became Nonthaburi Institute of Telecommunications, which later developed into King Mongkut's Institute of Technology Ladkrabang (KMITL) in 1985.



KMITL aims to develop personnel and conduct research with an emphasis on science and technology. It was founded during the reign of King Bhumibol Adulyadej, which brings a very gratefulness to the institute for His Majesty's continued patronage. As in 1961, His Majesty the King graciously bestowed the name of King Mongkut, who was honored as "Father of Thai Science", shall be the name of the institute as, "King Mongkut's Institute of Technology" or KMIT and granted the institute permission to use the insignia of King Mongkut, the Great Crown, as the institute's emblem. At that time, the institute consisted of three campuses: Ladkrabang Campus, Thonburi Campus, and North Bangkok Campus. In 1985, the three campuses of King Mongkut's Institute of Technology became independent higher education institutions and were renamed:

1. King Mongkut's Institute of Technology Ladkrabang (KMITL)
2. King Mongkut's Institute of Technology Thonburi (later renamed as King Mongkut's University of Technology Thonburi (KMUTT))
3. King Mongkut's Institute of Technology North Bangkok (later renamed as King Mongkut's University of Technology North Bangkok (KMUTNB))

King Mongkut's Institute of Technology Ladkrabang continued to receive His Majesty The King's grace and interest. His Majesty The King presided over the opening ceremony of the Ladkrabang Campus and visited the institute to attend various academic exhibitions organized by the institute. The first exhibition His Majesty The King attended, together with Her Majesty The Queen Sirikit, was the King Mongkut Ladkrabang Exhibition organized in 1976.



Following the year, His Majesty also visited the institute to attend the King Mongkut Ladkrabang Exhibition in 1983 and 1987. His Majesty The King always listened to presentations with great interest, asked questions, and sometimes gave suggestions to researchers. During his visit to the King Mongkut Ladkrabang Exhibition in 1987, after learning that Ladkrabang was hit by flooding in 1983, His Majesty The King gave advice to the institute to build a water retention area or monkey cheek area to temporarily store water when the seawater surged up and floodwater could not be removed to prevent Ladkrabang and the surrounding area from flooding.



During his visit to the King Mongkut Ladkrabang Exhibition in 1983, people and village scouts who came to welcome this visit donated money to support His Majesty The King's royal charity. His Majesty The King then handed the money to the institute, which was used to establish the "Royal Research Fund" for rewarding professors who produce outstanding research.



In addition to his visits to the exhibitions organized by the institute, His Majesty The King presided over a graduation ceremony to confer diplomas upon graduates from King Mongkut's Institute of Technology Ladkrabang. At every graduation ceremony, His Majesty The King also gave royal speech to guide new graduates, faculty, and personnel of the institute in life and career.





"Our nation was established on a foundation that consists of many important components including industry, agriculture, irrigation, economy, education, and society. Therefore, technology should be properly used to create national prosperity in a way that is consistent with all components of our nation's structure in order to produce a perfect and balanced result or benefit. I would like to leave this advice for graduates to ponder on as guidance in your conduct."

His Majesty the King's royal speech given at the graduation ceremony of King Mongkut's Institute of Technology at the Main Auditorium, King Mongkut's Institute of Technology Ladkrabang Campus on Thursday 24 March 1977



Message from the Chancellor

University is more than a place to study. Thailand's Ministry of Higher Education, Science, Research and Innovation (MHESI) emphasizes on a larger role of university, particularly, on its contribution to the society and the nation. Nowadays, it is generally known that the educational system presents direct link to social and economic development of a country. Society's expectation toward universities is high. KMITL embraces this expectation and commits to support the society in moving toward sustainable development. Body of knowledge and research works that KMITL has cultivated throughout generations can serve as a basis to support better quality of life benefiting large group of population. In the next steps, KMITL is moving toward becoming a 'sustainable university'.

The Council remains supportive and is pleased to see that KMITL is moving toward this direction. The work to achieve the sustainable development relies on partnership and mutual effort at all levels. In this regard, I strongly encourage all KMITL colleagues and partners to work together. Sustainability is the key for better quality of life in our campus

A handwritten signature in black ink, reading "K. Kittayarak".

Prof. Dr. Kittipong Kittayarak
Chancellor of KMITL Council



Message from the President

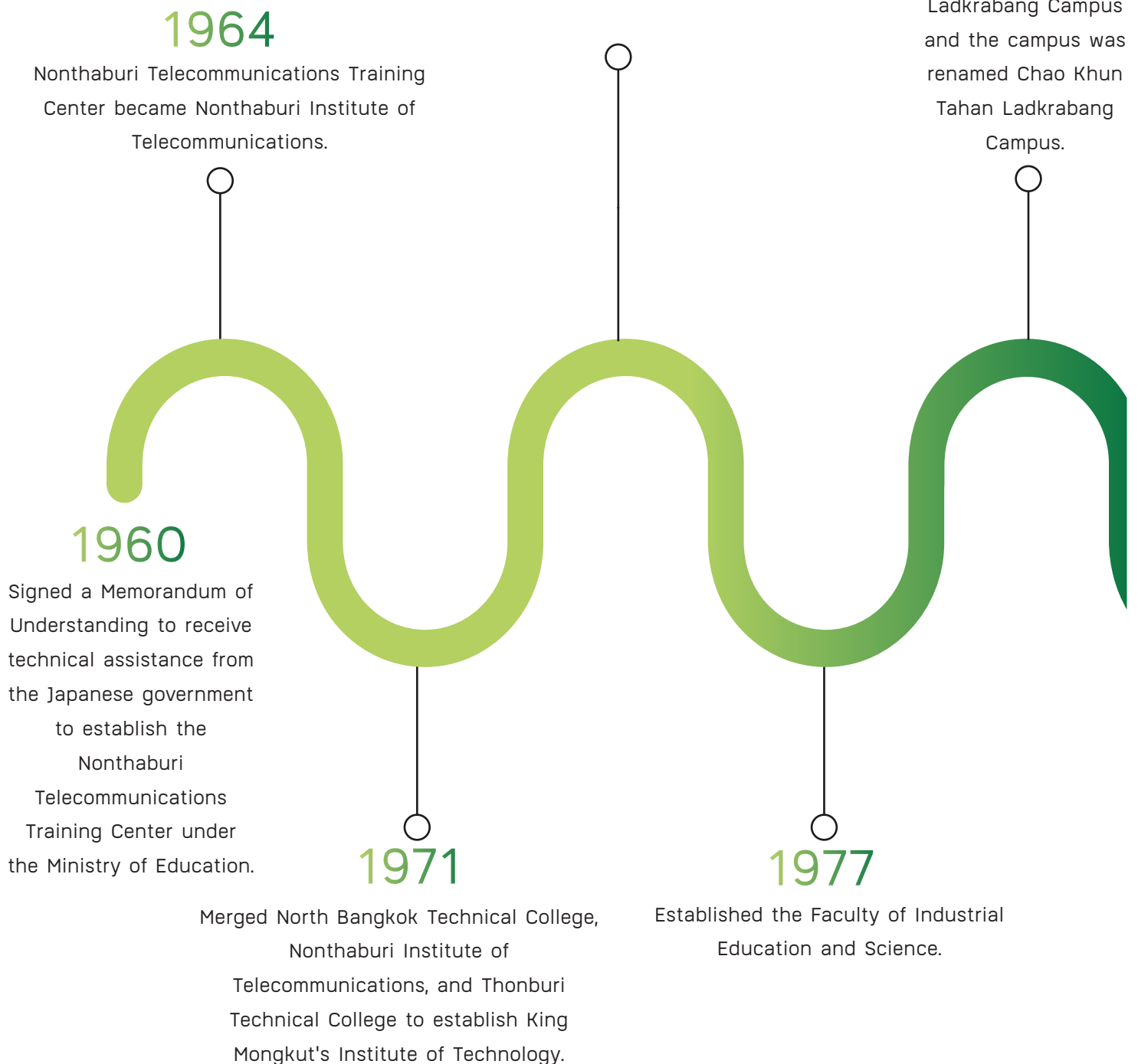
King Mongkut's Institute of Technology Ladkrabang (KMITL) strives to become a world-class university in science and technology to produce quality human resources that are essential for driving Thailand's development goals. The philosophy of sustainability in higher education is strongly determined as one of the institute's management policies. KMITL aims to use the UN's Sustainable Development Goals (SDGs) as a guideline for driving its operations to achieve the mission. Contribution for achieving the SDGs is important, not only for Thailand, but also the international societies. The campaign requires cooperation and supports from our staff members and students in all levels.

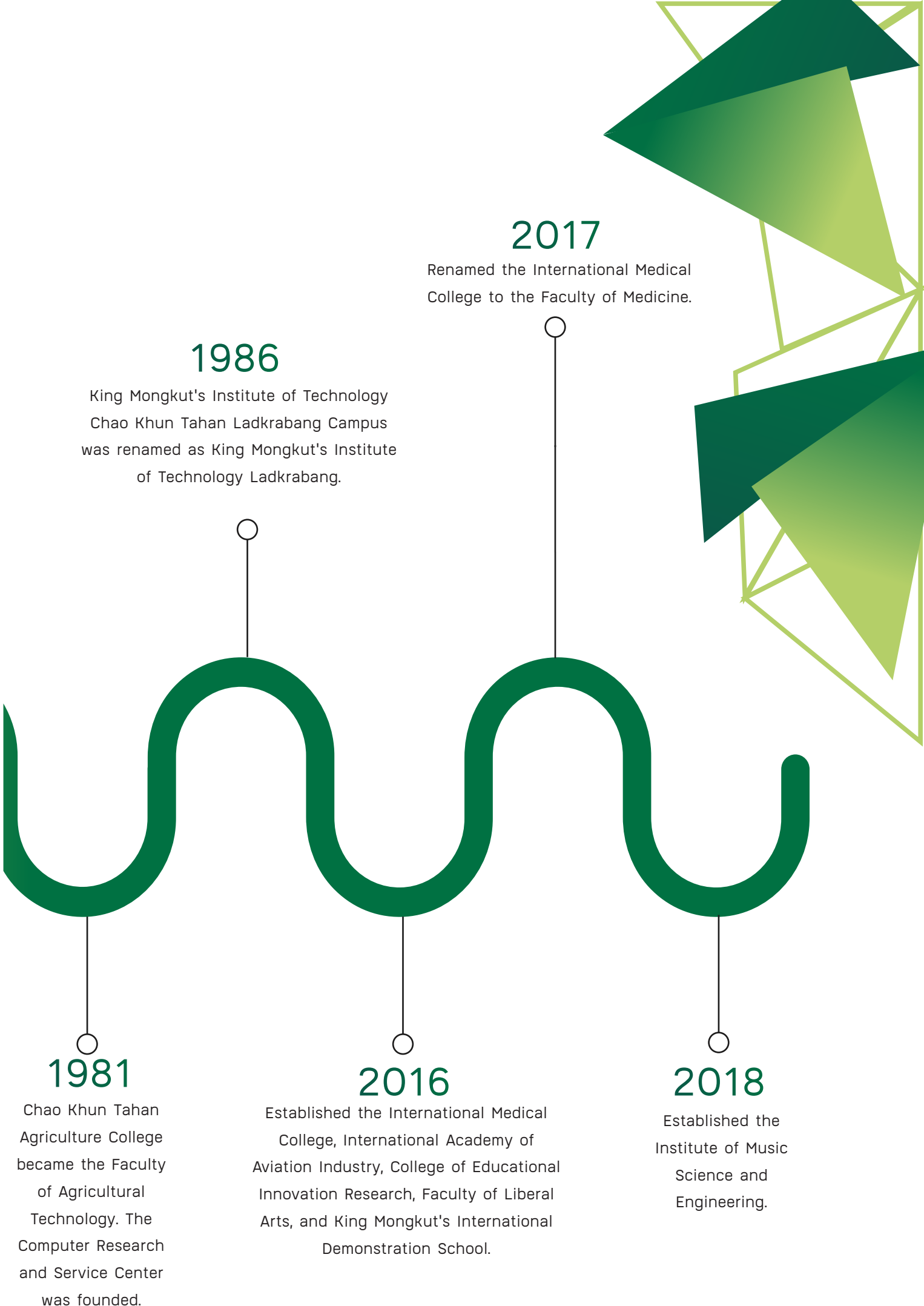
We have promoted comprehensive information of SDGs to our students, staff, and all communities and implemented a great deal of efforts in accordance with SDGs via several academic services, researches, and projects. We have developed our students to be the technology disruptors with necessary hard and soft skills while encouraging their awareness in sustainability and environmental responsibility.

I thank you all for your contributions in achieving our sustainability performance presented

Prof. Dr. Suchatvee Suwansawat
President of King Mongkut's Institute
of Technology Ladkrabang

History





1981

Chao Khun Tahan Agriculture College became the Faculty of Agricultural Technology. The Computer Research and Service Center was founded.

1986

King Mongkut's Institute of Technology Chao Khun Tahan Ladkrabang Campus was renamed as King Mongkut's Institute of Technology Ladkrabang.

2016

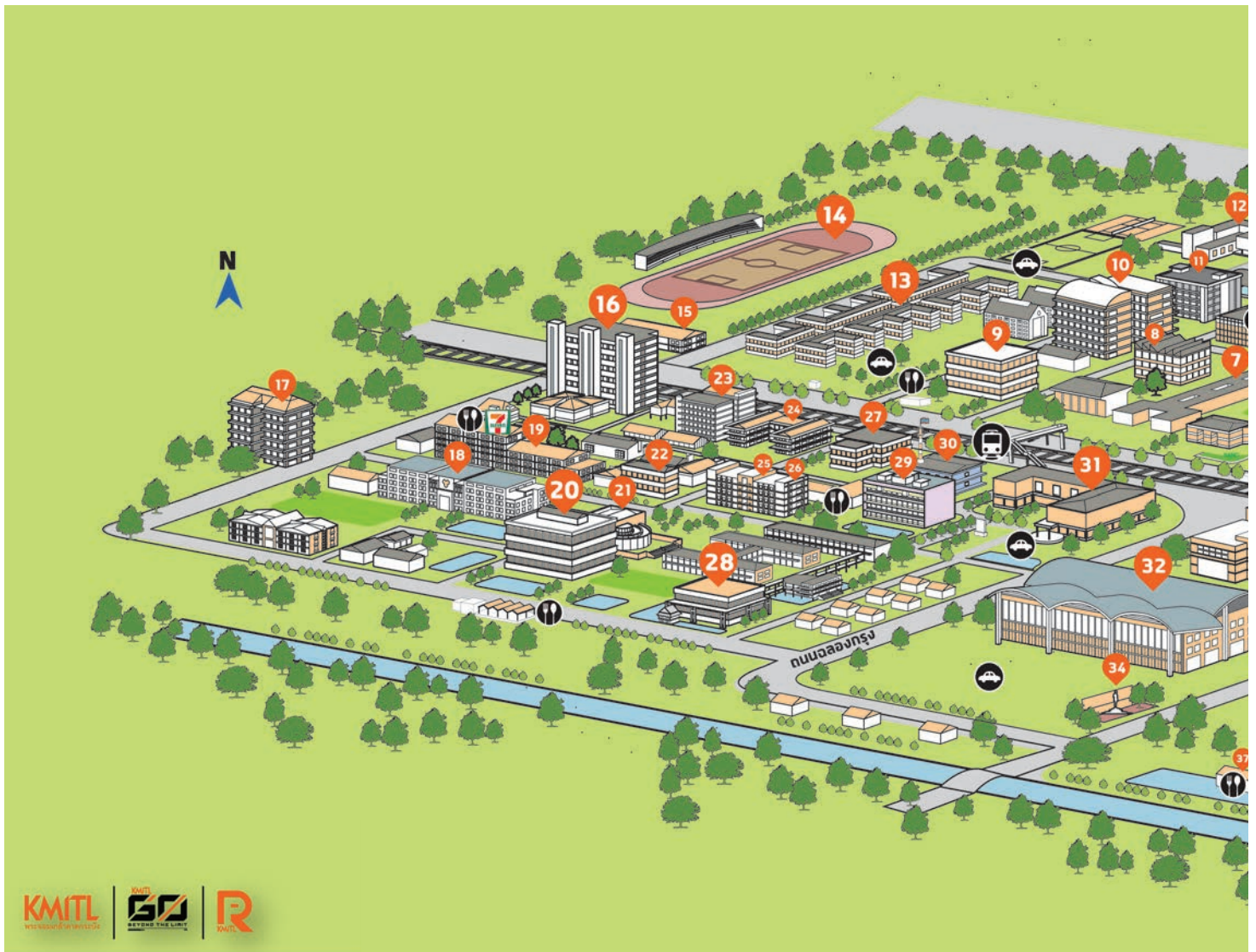
Established the International Medical College, International Academy of Aviation Industry, College of Educational Innovation Research, Faculty of Liberal Arts, and King Mongkut's International Demonstration School.

2017

Renamed the International Medical College to the Faculty of Medicine.

2018

Established the Institute of Music Science and Engineering.



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|--|--|
| <ol style="list-style-type: none"> 1. Krom Luang Naradhiwas Rajanagarindra Building (Office of the President Building) 2. King Mongkut's International Demonstration School (KMIDS) 3. Faculty of Medicine 4. Common Lecture Building 5. KMITL Medical Clinic 6. Nanotechnology Research Center 7. Plaza Avenue 8. Automation Research Center 10. ECC Building 11. International College
Nanotechnology College
Data Storage Innovation College 12. KMITL Alumni Association 13. Student Dormitory | <ol style="list-style-type: none"> 14. Sport Complex 15. Gymnasium 2 16. 12 Floors Building, Faculty of Engineering 17. KMITL Staff Condominium 18. Faculty of Architecture 19. Department of Chemical Engineering
Department of Food Engineering 20. Faculty of Architecture 21. Professor Prasom Rangsiroj Auditorium 22. Department of Civil Engineering 23. Department of Mechanical Engineering
Department of Industrial Engineering 24. Department of Instrumentation Engineering |
|--|--|



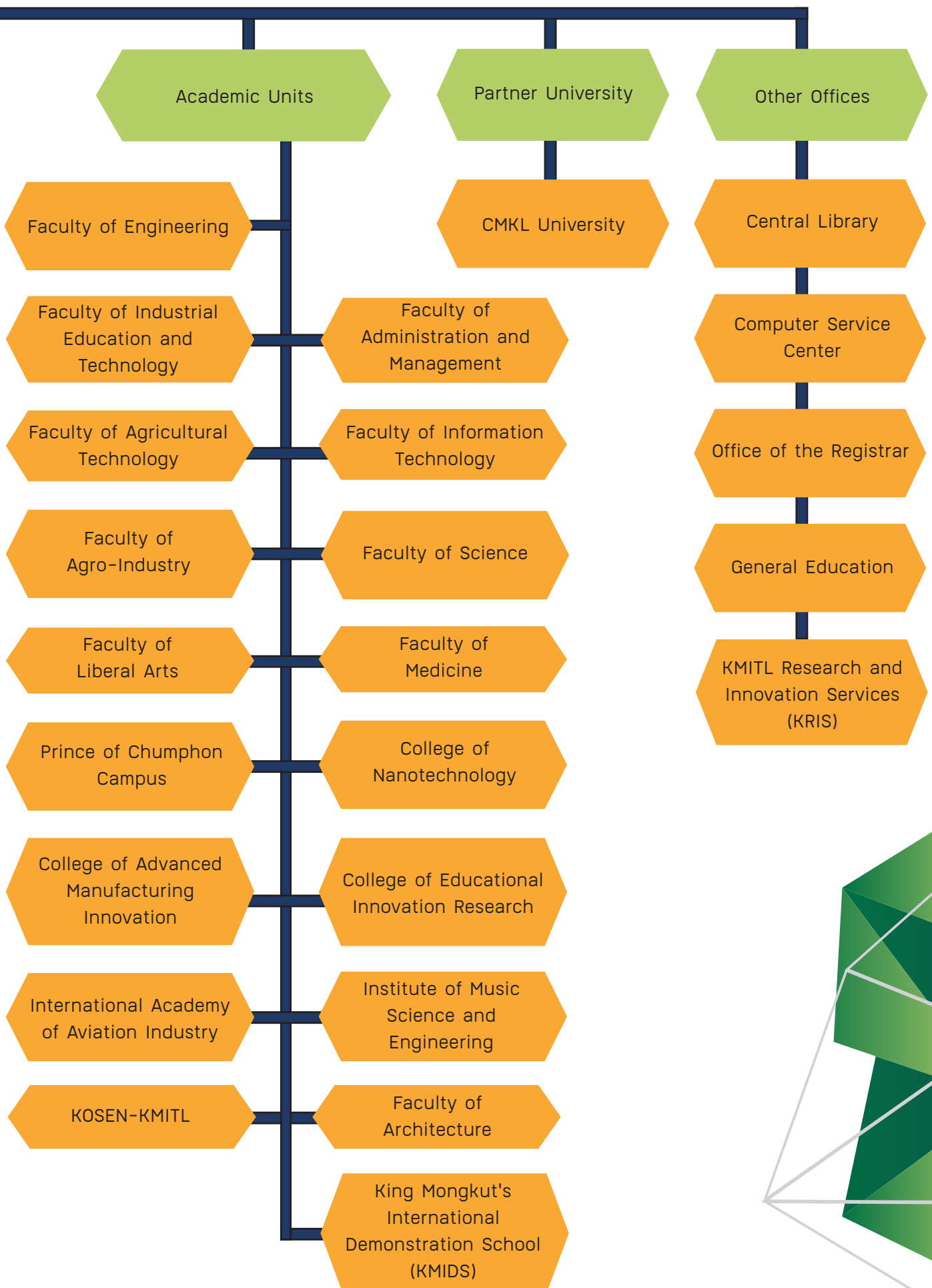
สถาบันเทคโนโลยีพระจอมเกล้าเจ้าคุณทหารลาดกระบัง King Mongkut's Institute of Technology Ladkrabang



25. Lecture Building, Faculty of Engineering
26. Institute of Music, Science and Engineering (IMSE)
27. Department of Electronics Engineering
28. Dean Office, Faculty of Architecture
29. Dean Office, Faculty of Engineering
30. Department of Telecommunication Engineering
31. Main Auditorium
32. KMUTL Convention Hall
33. KMUTL Central Library
34. Chao Phya Surawong Waiyawat Monument
35. Faculty of Agricultural Technology
36. Faculty of Agro-Industry
37. Canteen, Faculty of Agricultural Technology
38. Studio Agricultural Communication
39. Student's Association
40. Faculty of Science
41. King Rama IV's Monument
KMUTL's Museum
42. Faculty of Industrial Education
43. Faculty of Agricultural Technology
44. KMUTL Computer Service Center
Faculty of Administration and Management
45. International Academy of Aviation Industry
46. Faculty of Information Technology



Organizational Structure



Record of Merits

2005

Mrs. Patcharee Koetchum, Finance and Accounting Analyst from the Faculty of Agricultural Technology, was awarded Outstanding Civil Servant 2005.

Mrs. Samran Waebanphaeo, General Administration Officer Level 5 from the Planning Division, Office of the President, was awarded Outstanding Civil Servant 2005.

Lamduan Nutchanon, officer from the Office of the President, Faculty of Architecture, was awarded Outstanding Civil Servant 2005.



2006

Associate Professor Pichit Lamyong from the Department of Electrical Engineering, Faculty of Engineering, won the National Research Council Invention Award 2006.

Assistant Professor Aphenet Unakul from the Department of Computer Engineering, Faculty of Engineering, was awarded Innovation Ambassador 2006 in the design and branding category.

Associate Professor Dr. Ittipon Jangchad, Dean of the Faculty of Science, was awarded Innovation Ambassador 2006 in the design and branding category.





2008

Associate Professor Dr. Mongkol Mongkolwongrot from the Faculty of Engineering won the "2008 ASME Best Paper Award Journal of Tribology."

2010

Associate Professor Acting Lieutenant Pichai Sotphiban from the Faculty of Industrial Education won the Outstanding Art and Architecture Conservation Award 2010 from the Association of Siamese Architects under Royal Patronage.



Associate Professor Acting Lieutenant Pichai Sotphiban from the Faculty of Industrial Education won an Honor Award and Certificate of Honor for contributions to King Mongkut's Institute of Technology Ladkrabang.

Associate Professor Acting Lieutenant Pichai Sotphiban from the Faculty of Industrial Education won The Best Industrial Educator Award from the Faculty of Industrial Education.



Associate Professor Acting Lieutenant Pichai Sotphiban from the Faculty of Industrial Education won an Honor Award for outstanding achievement from the Faculty of Industrial Education.

2011

Associate Professor Dr. Warawut Krusong from the Faculty of Agro-Industry won the Outstanding Machinery Technology Award in the manufacturing machinery category at the Machinery Technology Competition 2011 organized by the Ministry of Science and Technology.

2012

Professor Dr. Suchatvee Suwansawat, President of KMITL was selected as the 2012 President Eisenhower Fellow by the Dwight Eisenhower Foundation, USA.

Professor Dr. Suchatvee Suwansawat, President of KMITL won the ASEAN Outstanding Engineering Achievement Contribution Award 2012.

2014

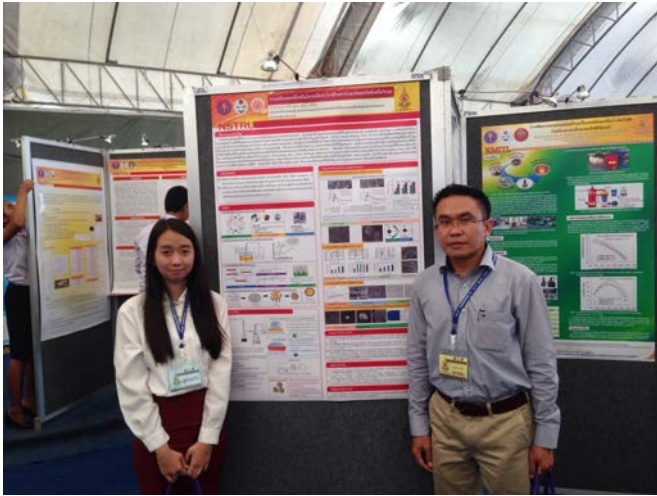
Assistant Professor Dr. Sutheera Phanthiranurak from the Faculty of Engineering won the Best Paper Award for Enhancement of Communication and Information Engineering Research through University-Industry Collaboration Toward Sustainable Development in ASEAN Countries at the Regional Conference on Computer and Information Engineering 2014 (RCCIE 2014)

for the paper titled, "An Enhanced Hybrid Recommendation System with Review Helpfulness Trust."

Assistant Professor Dr. Ekkapoj Tantraphiwat from the Faculty of Engineering won the Leading Innovation Award for "Remote Control Sprayer" at the International Intellectual Property Network Forum (IIPNF), held on 26 June 2014 at IMPACT Arena, Exhibition and Convention Center, Muang Thong Thani.

Associate Professor Dr. Ekkachai Sumalee from the Faculty of Engineering won the ASPIRE Prize 2014 (APEC Science Prize for Innovation, Research and Education) on 17 September 2014 in Beijing, People's Republic of China. This award is given once a year to the best researcher in the Asia-Pacific region selected from the APEC member countries.





2015

Associate Professor Udomsak Saribut from the Faculty of Industrial Education was awarded National Best Teacher in the Field of Education from Her Royal Highness Princess Maha Chakri Sirindhorn on 24 March 2015 at Chitralada Royal Villa.

Assistant Professor Dr. Surat Arirat from the Faculty of Engineering won the Poster Award at the third Higher Education Research Promotion Congress (HERP Congress) between 9-11 March 2015.



2016

Professor Dr. Aphinan Thanachayanon was appointed as a professor of electronic engineering, Faculty of Engineering, on 2 December 2016.



2017

Assistant Professor Bunchana Poorahong from the Department of Computer Engineering, Faculty of Engineering, and Associate Professor Songchom Chunlasai from the Department of Interior Architecture, Faculty of Architecture, were awarded Outstanding Civil Servant 2017.

2018

Professor Dr. Suchatvee Suwansawat, President of KMITL received the "Intharachak" Award for Person of the Year 2018 as a role model who had outstanding service to the society and country from the Institute of Young Entrepreneur Development at Central Plaza Chaeng Watthana, Bangkok.



Professor Watcharee Sawamiwat was appointed professor of architecture, Faculty of Architecture, on 15 May 2018.



Assistant Professor Dr. Chinnawat Suratsawadi from the Department of Telecommunications Engineering, Faculty of Engineering, was selected as the AAET Fellow at the Annual General and Council Meeting of the ASEAN Academy of Engineering and Technology (AAET) on 30 June 2018 in Malaysia.

Assistant Professor Dr. Saowaphak Theerasong and Assistant Professor Dr. Natthawut Choengchan from the Department of Chemistry, Faculty of Science, received Patent No. 52458 for "Automatic Chemical Extractor with Instant Measurement" from the Department of Intellectual Property.



Assistant Professor Dr. Sineenat Ponyorat from the Department of Animal Production Technology, Faculty of Agricultural Technology, was awarded the Moral and Ethical Role Model Plaque in the educator category from Rajamangala University of Technology Rattanakosin Klai Kangwon Campus.



2019

Professor Dr. Suchatvee Suwansawat, President of KMITL received the 2019 Regional DX Leader (Asia/Pacific) from IDC Asia/Pacific Digital Transformation Awards in Singapore.

Professor Dr. Suchatvee Suwansawat, President of KMITL received the 2019 Quality Person of the Year Award in Technology. The 'Template' goodness award is given to a quality person as the prototype of creating good things that is beneficial to the country. The event was Organized by the Science and Technology Council of Thailand Foundation (IPST).



Sustainability University Policy

Sustainable development is the development principle that covers three major areas, varying in economic development, social development, and environmental development. Several countries have adopted different approaches to achieve sustainable development goals depending on costs and natural resources. The concept of sustainable development has been developed continuously over the past decades. In 1987, the World Commission on Environment and Development (WCED) published the Brundtland Report to present data on current environmental quality and define sustainable development as a "development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

In 2002, the Earth Summit was held in Rio de Janeiro, Brazil. The Summit endorsed the outcome document entitled, "The Future We Want" in which the political commitment to sustainable development was remodeled, and the Sustainable Development Goals (SDGs) were also determined. The goals served as a guideline for evaluation of sustainable development operations in countries around the world. Subsequently, in 2015, the United Nations endorsed the Transforming Our World: The 2030 Agenda for Sustainable Development to set forth the directions of global sustainable development for the next 15 years and reaffirm the political commitment of the member countries to end poverty and inequality. Thailand has contributed to the agenda and its Sustainable Development Report has been prepared and published by the National Committee for Sustainable Development. In 2019, Thailand was ranked 40th among other 162 countries surveyed on development progress relating to the UN's SDGs, considered the highest placed country in ASEAN.

To be aligned with the country's sustainable development policy, King Mongkut's Institute of Technology Ladkrabang is committed to develop a sustainable educational, research institution and a world-class university under the following vision and concept:

KMITL ONE "Toward number one"
WE CAN DO IT TOGETHER!
CORE VALUE "LOVE"

L = Loyalty

O = Optimism

V = Vision

E = Excellence



To achieve the the SDGs, KMITL has developed the Strategic Plan 2017 - 2027 that focuses on participation of all the institute's personnel and executives. It lays out five strategies as follows:

Strategy 1: Sustainable development of research and innovation

Strategy 2: Capacity building and production of manpower to meet the needs of the country and the world

Strategy 3: Promote academic services and build a foundation of knowledge

Strategy 4: Sustainable development of quality organization (KMITL Excellence)

Strategy 5: Advance toward Top 10 ASEAN (KMITL New S-Curve)

The Strategic Plan is aligned with the institute's missions between 2015 - 2019 that covers issues of science and technology research at the ASEAN level, production of graduates in the field of science and technology that meet international standards, academic services integrated with science and technology in Thailand and the ASEAN region, supports of arts and cultural related to research and curriculum, and capacity building and stability for KMITL's personnel. The following policy guidelines have been adopted.

Step 1: Good Governance & Management

Clear and effective communication; fair, transparent, and accountable management; sustainable revenue.

Step 2: World Class Academic Programs

Develop outstanding international programs, produce graduates capable of competing and contributing to the country.

Step 3: Innovative Research Clusters

Promote cooperation between faculties and colleges, build research teams to strive for excellence, and attract world-class researchers.

Step 4: Conducive Infrastructure

Build a clean and beautiful university town and use university space for maximum efficiency.

Step 5: Quality of Life and Harmony

Improve the quality of life of KMITL's personnel and students, foster unity, build capacity for the Prince of Chumphon Campus, and support our alumni.

KMITL's Role in Social Sustainability

For over 10 years, Sustainable Brands Conference (SB Conference) has been a global conference in business and marketing industry where responsibly operating and making benefits for their organization and society as well. Currently, more than 10 countries across the world hold the SB Conference for empowering and driving business to be parts of social sustainability and make it more tangible and measurable. According to the SDG 17 objective, Partnership for The Goals, which emphasizes on participating to achieve the goal of strengthening the means of implementation and revitalize the national and global partnership for sustainable development. So, our institute is one of the most important members for the 5th SB Conference, where Thailand has held for 4 years, since 2015. For the year 2019, the conference called SB'19 Oceans & Beyond would be held on this 25th- 26th October 2019 at King Mongkut's Institute of Technology Ladkrabang Prince of Chumphon Campus, with following details:

- Being a key partner for technology: From being an institute where its outstanding and strength are in the innovation, participating in this SB Conference is an opportunity to show our works which has applied various technologies for serving society's demands, leading to improve their quality of life and increasing their income and sustainable environment management. In this conference, KMITL staged all works which collaborated with the society as the seminar and also show as an exhibition. Most importantly, KMITL collaborated with business industry to be a partner in future project from brainstorming in the SB Conference.





- Being a partner for capability building: Achievement from holding the SB Conference is not the number of audience but it is a capability to further the idea for society is substantial uses. Capability of using, especially in the innovation, depends on capability building of society through the education, practice and enhanced experience, including improving the old knowledge to be a guideline for building new capability. This is another role that KMITL get from being a crucial member in holding this SB Conference. Also, we can get an opportunity to be able to take notice of society's problems and market's needs. KMITL aims to combine society's capability with market's need properly, without damaging society's identity and environment sustainability.

For this SB Conference, KMITL was a co-host who organized the plans as follows:

- Provide the KMITL Chumphon Campus' area: Since this campus is a learning hub, not only for this province but also for the South of Thailand, so holding the conference in this area can create opportunities to spread the knowledge more easily and more convenient. Most importantly, this gives all students a rare opportunity to come learning from global experts.



• Participation from all departments in the institute: All departments take part in for passing on knowledges and improve them, leading to the action and capability building for society. We closely worked with SB Thailand for preparation and organizing the conference, providing idea on main stage, and driving mini workshops according to the social development as below

- >> Sustainable Seafoods & Fishing
- >> Coffee & Community
- >> Waste Management
- >> Circular Economy
- >> Community-based Tourism
- >> Sustainable Product Development & Design





• Continue on knowledges from the conference substantially and sustainably: Both of KMITL and SB Thailand believe in the same idea that we would not waste anything, especially knowledges. After finishing the conference, KMITL continues building on these knowledges for society at Chumphon and anywhere where can apply them such as:

>> Expanding the role of Chumphon Campus to the Oceanic Center of Thailand, in order to be an international marine knowledge hub that will provide both of knowledge and research and development, bringing Thailand to be one of regional knowledge hub where can properly apply to society, business industry and all dimension of sustainable development.

>> Carry on Thailand Sustainable Seafood Manifesto: As holding this SB Conference, one of the creative works which are future social innovation is license announcement for Thailand Sustainable Seafood Manifesto. This idea is initiated from the conference, but it has to be continued and expanded to a future crucial work, which KMITL will apply to Thailand where is now accepted as one of important food supplies in the world.

>> Bringing the global knowledges from experts and local knowledges together to design courses which are compatible with sustainable development, to truly make KMITL's future-step be a forward-step together with Thai society.

KMITL 60th anniversary

In the occasion of the 60th anniversary "GO BEYOND THE LIMIT", The King Mongkut's Institute of Technology Ladkrabang aims to contribute and develop the society under the institute's campaigns. In accordance with above, KMITL has launched the campaign, City of Education, which emphasizes on both education and environmental development. Thus, KMITL's main goal is to be the "University for Thais" where it stresses on developing human skills and also regarding on being sustainable Green University.



KMITL
พระจอมเกล้าเทคโนโลยี

KMITL GO
BEYOND THE LIMIT

KMITL GO GREEN

แผนผังตำแหน่งที่จะปลูกต้นไม้
แผนผังตำแหน่งที่จะปลูกต้นไม้ภายในสถาบันเทคโนโลยีพระจอมเกล้าเจ้าคุณทหารลาดกระบัง

- พรรณไม้แสดงอัตลักษณ์
- พรรณไม้แสดงเอกลักษณ์
- พรรณไม้ให้ร่มเงา ดูแลรักษาง่าย
- พรรณไม้บังคับสายตา และลดมลพิษ
- พรรณไม้ที่เกี่ยวข้องกับงานเกษตรกรรม
- พรรณไม้เบิกนำ/อนุรักษ์
- พรรณไม้ริมน้ำ

กลุ่มพรรณไม้แสดงอัตลักษณ์
 ๓๓๓๓

กลุ่มพรรณไม้กลุ่มน้ำ พรรณไม้ริมน้ำ
 ต้นน้ำ, โสมน้ำ, บอนสีน้ำ, ต้นหน้มน้ำ, ต้นหน้มน้ำ, ต้นหน้มน้ำ, ต้นหน้มน้ำ, ต้นหน้มน้ำ

กลุ่มพรรณไม้เปลี่ยนตามฤดูกาล
 ฟ้ากมลา, เต่า, ต้นหน้มน้ำ, ต้นหน้มน้ำ, ต้นหน้มน้ำ, ต้นหน้มน้ำ, ต้นหน้มน้ำ, ต้นหน้มน้ำ, ต้นหน้มน้ำ, ต้นหน้มน้ำ

กลุ่มพรรณไม้พื้นที่ป่าอนุรักษ์
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กลุ่มพรรณไม้โครงการพิเศษ
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KMITL **The Master of Innovation** **Beyond The Limit**

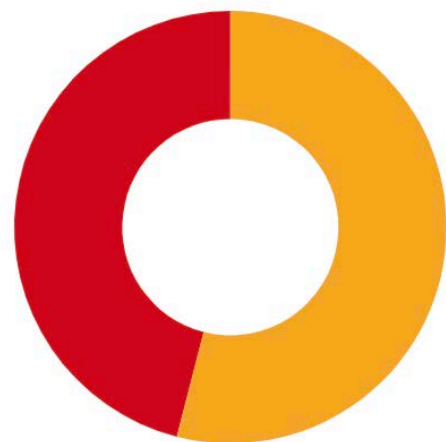
The institute plans to drive under the 60th anniversary project by hosting a seminar under the topic "How to Develop the City of Learning?". Under the campaign "City of Education", there will be an a "KMITL Forum" as the stage for discussing, exploring views, and escalating into a conclusion from students, staff, and general public from our community. From those mentioned above, everyone can participate to develop the institute together. On the other hand, we have launched the campaign on planting trees to stimulate awareness on sustainability We have established "KMITL Green Day", which supports increasing of green areas in the institute, to adjust the landscape and ecology to be shady, furthermore, to cultivate the green mind by allowing nature to be parts of students and staff. In the event, there will be a Green Market, a flea market that trades environmentally friendly products. There is a telephone reception point for accepting trees donation. To that extend, promoting public activities of students and staff of the institute, shall address the general public's awareness of sustainability. Henceforth, the institute will be enthusiastic to keep launching good activities, in order to build the KMITL to be the strong and sustainable "City of Education".

Next Education



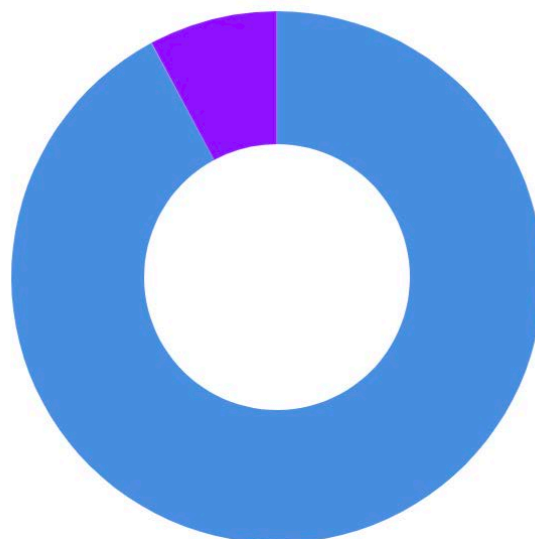


King Mongkut's Institute of Technology Ladkrabang strives to develop strong and sustainable education and organization in accordance with the institute's Strategy Plan and Policy Step 1: Good Governance & Management, Step 2: World Class Academic Programs, and Step 3: Innovative Research Clusters. In 2018, KMITL had programs, research, and collaborations with various sectors to support and build the institute's capacity.

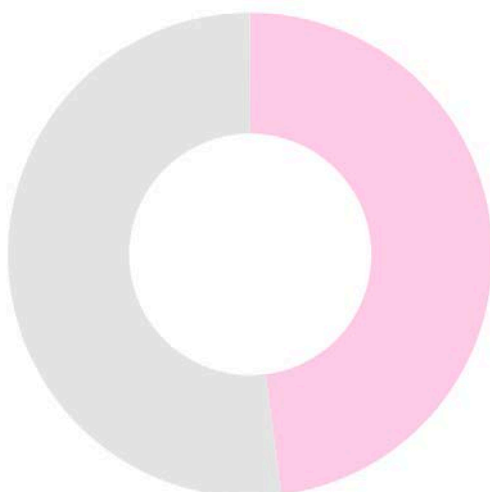


Female (54%) Male (46%)

Undergraduate students (87.65%)
Graduate students (12.35%)



Undergraduate courses (92.17%)
Graduate courses (7.83%)



Academic staff (47.96%) Support staff (52.04%)

Intensive Education

• Academic Strengths

The Production of a New Breed of Graduates and Skilled Manpower to Meet the Needs of the Manufacturing Sector in Accordance with the Thai Higher Education Reform Policy Project aims to develop specific capacity and specialized skills needed by the industrial sector. Project participants will receive a certificate of competency and can use learning outcomes or results to accumulate credits to apply for a degree diploma when all the qualifications required by the program have been met. Besides, KMITL offers an opportunity for students in regular education programs to cooperate with business establishments to further develop the skills for the New S-Curve industry. Students can choose either the four-year program or an extended program after completing the third or fourth year, which focuses on learning a variety of skills that allow students to develop further.

- To learn new skills or to teach workers new skills
- Programs
 - Agro-Industrial System Engineering
 - Civil Engineering
 - Computer Engineering

Upskill

Reskill

Multi-skill

- To learn new skills so that you can do a different job
- To train people to do a different job
- Programs
 - Instrumentation Engineering for Electric Vehicles
 - Automation Engineering
 - Computer Science

- To be able to do a lot of different things
- Programs
 - Robotic and AI Engineering

The KOSEN-KMITL Project (five-year program) was established in response to government policy to meet the needs of the industrial sector. It consists of five programs, including mechanics, electronics, electrical, mechatronics, and automotive. Each program is offered to 25 students.

King Mongkut's National Academy of Science and Technology (KNAST) was established to produce diploma graduates in engineering and technology. The academy focuses on problem-based learning, project-based learning, research-based learning, and STEM education to enable students to learn and integrate scientific and technological knowledge with engineering and mathematic processes to solve real-world problems. Students are able to train in an industrial workplace to gain hands-on experience. The curriculum is designed based on Japan's KOSEN, France's IUT, and Germany's dual system, which are effective curriculums for producing vocational manpower able to meet the needs of the Thai industrial sector.

The Institute of Music Science and Engineering was established to promote and develop the music industry of Thailand, which has grown at the yearly rate of not less than 10 percent over the past 10 years. This includes music in the record industry; film industry; advertisement, gaming industry, and animation; radio and television stations; musical instrument manufacturing industry; audio engineering and audiovisual medical equipment; automotive industry; consumer electronics for music production and concerts; and construction projects requiring the sound knowledge in construction design.

In addition, KMITL has improved its 180 programs, in a proportion of undergraduate: graduate programs of 48.33: 51.67, to comply with the TQF standards set by the Office of the Higher Education Commission, Ministry of Education.



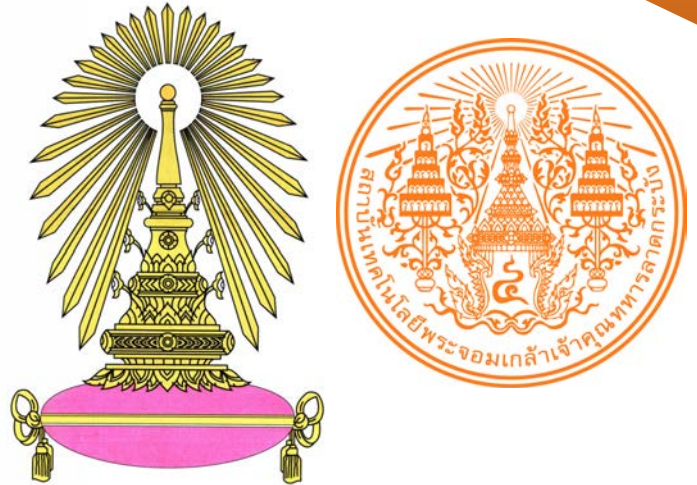
- **Cooperative Education Programs**

Short Course Executive Education is a collaboration between three institutions, including King Mongkut's Institute of Technology Ladkrabang, Chulalongkorn University, and CMKL University. The curriculum was developed by education experts to be aligned with the Eastern Economic Corridor (EEC) and Thailand 4.0 policies. It includes in-depth training in various fields and is sponsored by public and private sectors such as Thai Beverage Public Company Limited. KMITL will negotiate with the Office of the Civil Service Commission (OCSC) on a cooperative agreement to allow OCSC scholarship students to further their study at CMKL University.

The curriculum includes two programs:

- A cross-institutional double degree in robotic engineering. Graduates from this program will receive a degree from both King Mongkut's Institute of Technology Ladkrabang and Chulalongkorn University.
- Electrical & Computer Engineering degree (ECE). Graduates from this program will receive a degree from three universities.

The Faculty of Medicine was established in collaboration between King Mongkut's Institute of Technology Ladkrabang and Medical Service Department, Sirindhorn Hospital. The faculty offers courses that combine medical and health science and aims to become a medical school with international standards to enhance the quality of life of Thai people and the competitiveness of the country.





- **Language Supports**

The KMITL Language Center is a collaboration between KMITL, Institute of International Education (IIE/Southeast Asia), and Center for Professional Assessment (CPA) (Thailand).

Projects that promote the use of the English language among students such as English Cafe and English Day projects.

Develop 23 international programs in the Faculty of Engineering, Faculty of Science, Faculty of Agro-Industry, Faculty of Information Technology, Faculty of Administration and Management, College of Educational Innovation Research, International College, Faculty of Medicine, and International Academy of Aviation Industry.

- **Collaboration with External Agencies**

- King Mongkut's Institute of Technology Ladkrabang hosted the MOU signing ceremony for the Community of Practice in Arts and Culture to exchange knowledge, develop a community of practice, and cooperate in research, academic service, faculty, and student activities, and arts and

culture support, as follows:

1. MOU with 14 educational institutions
2. MOU with Sukhothai and Kamphaeng Phet
3. MOU with Princess Maha Chakri Sirindhorn Anthropology Center (Public Organization)

- King Mongkut's Institute of Technology Ladkrabang signed the MOU with the National Science and Technology Development Agency (NSTDA), Ministry of Science and Technology Coordination Center, and Fabrication Lab to develop innovation skills for Thai children and youth under the Science for Human Development policy of the Ministry of Science and Technology.

- King Mongkut's Institute of Technology Ladkrabang signed the MOU with Sripatum University to produce a new breed of graduates and promote the development of academic and support for both staff and students. The collaboration will facilitate knowledge exchange and academic resource sharing to develop novel innovation and knowledge.

- Worakan Neyakorn, Assistant to the President for Research, signed the MOU with Air Chief Marshal Prajin Chantong, Deputy Prime Minister, to drive the application of research, invention, and innovation in three projects.

1. Road traffic death reduction with smart city innovation
2. Turmeric essential oil for industrial use
3. Diabetic patient screening using targeted genetic material at Inventor Day 2018 organized by the National Research Council of Thailand (NRCT).



- Dr. Kamon Kiatrueangkamala, Vice President for Information Technology, Dr. Akkarit Sangpet, and Dr. Orathai Sangpet signed the MOU with Colonel Sappachai Huwanan, President of CAT Telecom Public Company Limited, and 28 universities nationwide of the Maker Club for the study and development of information and communication network system.



- King Mongkut's Institute of Technology Ladkrabang cooperated with Sahathai Terminal Public Company Limited and Verily Vision Co., Ltd. to develop and support logistics innovation research for the logistics industry and support students and start-up business to use research to further develop business.



- King Mongkut's Institute of Technology Ladkrabang cooperated with Bangkok Airways Public Company Limited to support the PG Open House project. The project provides an opportunity for the company's employees and KMITL's students to study and observe the airline operation and attend lectures by airline staff to increase knowledge and experience.





- The Faculty of Industrial Education and Technology cooperated with Swan Industries (Thailand) Limited, one of the largest can manufacturer in Thailand, to develop electronic learning media, online media, and information technology management.



- King Mongkut's Institute of Technology Ladkrabang and the Metropolitan Electricity Authority (MEA) cooperated to research and develop energy production, storage, and supply technologies and develop curriculum and professional training programs to support a sustainable energy-smart campus.



- King Mongkut's Institute of Technology Ladkrabang and National Institute of Development Administration cooperated to promote education, support skilled personnel, and jointly conduct research to prepare for launching a new program in "Financial Engineering." It is the first program from the collaboration between KMITL and NIDA and combines engineering with financial and banking knowledge, bringing together the strengths and expertise of each institution.



Excellent Research

- **Citation Boost**

KMITL's management plan for 2017 to 2027 focuses on "sustainable development of research and innovation" with important strategies as follows:

- Increase the number of publications in international journals of full-time professors and researchers.
- Increase the number of citations of research papers published in national and international journals.
- Increase the number of innovations that can be applicable or commercialized.
- Increase external financial support for research, innovation, and invention for full-time professors.

Boosting citations cannot be achieved by simply increasing the number of published papers. The institute must also strive to produce quality research that meets the needs and be acceptable to the society. In 2018, KMITL improved its research management to produce research that meets the needs of the country and set up nine research clusters, including ICT robotics and automation, agriculture and food, biomedical, ICT smart city and Internet of Things (IoT), battery and EV, renewable energy, creative economy, materials, and logistics.

These research clusters intend to promote collaboration of interdisciplinary researchers who share similar interests and research that meets the demand and can be commercialized. For example, the Model Community of Innovative Protein Producer in the Eastern Region for Animal Feed Industry project in the agriculture and food research cluster receives 28,166,500 baht of research funding from the integrated research and innovation program. The project is directed by Dr. Norathat Prachum, Faculty of Agricultural Technology.

In addition, KMITL improved the quality standard of published papers by setting a KPI for research projects to publish papers in the Web of Science (WoS) database. To be consistent with this requirement, KMITL also revised the announcement on publication reward to give prizes to only research papers published in the Web of Science (WoS) database and the prices vary according to quartile. In 2018, 197 papers received the rewards totaling 4,941,953 baht.

3 GOOD HEALTH AND WELL-BEING



8 DECENT WORK AND ECONOMIC GROWTH



 **201-300**

 **101-200**

13 CLIMATE ACTION



17 PARTNERSHIPS FOR THE GOALS



 **88**

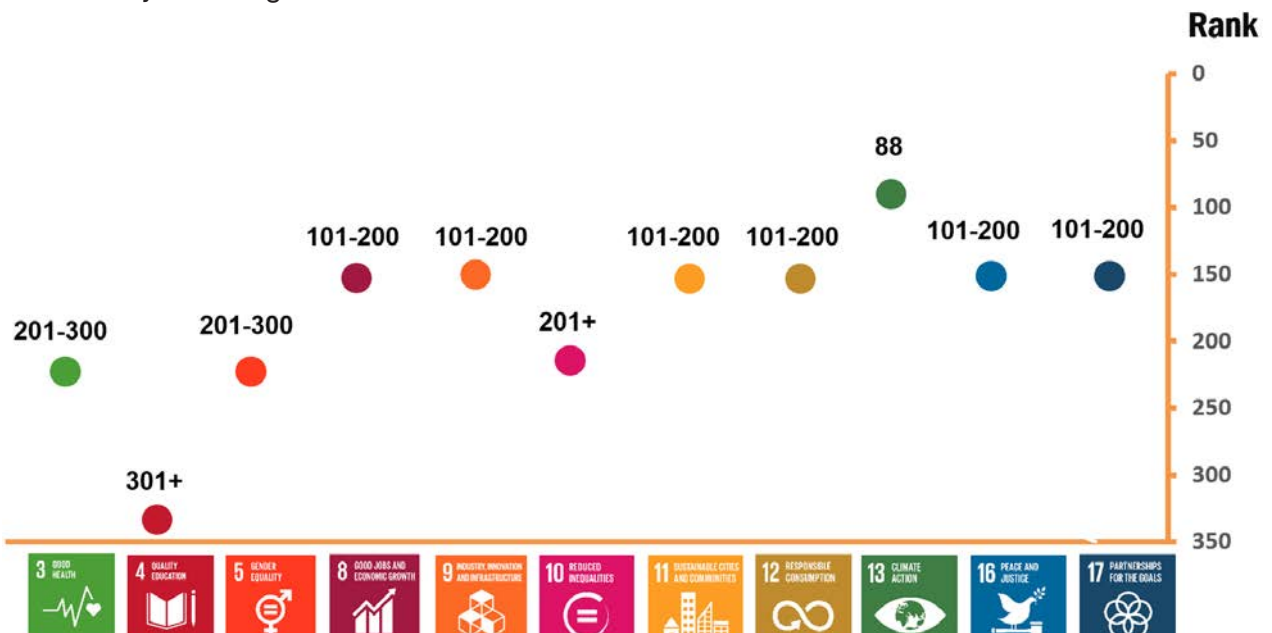
 **101-200**



World University Rankings

King Mongkut's Institute of Technology Ladkrabang is ranked in the following world university rankings.

- KMITL is ranked in the 201-300 in the Times Higher Education World Ranking
- Ranked 2nd place of the country in the Times Higher Education University Impact Rankings 2019. It has the highest scores in four areas, including:
 - SDG 13: Climate action: 88th in the world and 1st in the country.
 - SDG 17: Partnerships for the goals: 101-200th in the world and 2nd in the country.
 - SDG 3: Good health and well-being: 201-300th in the world and 3rd in the country.
 - SDG 8: Decent work and economic growth: 101-200th in the world and 1st in the country.
- Ranked in the 251-260 in Asia, 44th in ASEAN, and 9th in the country in the QS Asia University Ranking





- **Research Collaboration**

KMITL strives to conduct researches that genuinely meet the needs of the people while remaining determined to solve problems for the society. We have continued to build research collaboration with public and private organizations as well as the industrial sector. In 2018, the institute received 347,132,017.46 baht of research funding, which came from two major sources: the annual government budget and public and private funding. A total of 84 projects valued 156,744,100 baht were funded by the government. These projects included 57 basic research projects, 11 collaborative projects with the industrial sector, and 16 projects on social impacts. Also, from other public and private funding are

amounted to 190,387,917.46 baht.

Not only disseminating basic knowledge, but KMITL has also recognized the importance of commercialization of knowledge and research results. In 2018, there were 21 research and innovation projects that could be commercialized. Furthermore, the institute had successfully conducted research projects on national development and sustainable society and the community.

In 2018, KMITL collaborated with foreign organizations in various research projects, including:

- "Waste to Energy in Bangkok" in collaboration with Jiangsu WELE Environmental Co., Ltd., China. The project is conducted by International College, KMITL.



- "Coupler Circuit for Wireless Application" in collaboration National Taipei University of Technology, Taiwan. The project director is Dr. Chattapon Paksiri, College of Advanced Manufacturing Innovation.
- "Study of the Optimum Condition of Airflow with High Thermal Comfort for Thai Customers" in collaboration with Mitsubishi Electric Corporation Advanced Technology R&D Center, Japan. The project director is Assistant Professor Natthawipa Chearanaiwachira, Department of Mechanical Engineering.
- "Space Weather Research and Operation" in collaboration with the National Institute of Information and Communications Technology, Japan. The project director is Professor Dr. Pornchai Sarnithi, Department of Telecommunications Engineering.
- "Wide Area Sensing and Targeting using Ground Penetrating Radar in Cloudy Terrain" in collaboration with the Office of Naval Research Global, England. The project director is Professor Dr. Monai Krairerk, Department of Telecommunications Engineering.
- "Using Social Media Analysis for Emergency Resources Allocation" in collaboration with Taipei University of Technology, Taiwan. The project director is Assistant Professor Dr. Chumpon Yuangyai, Department of Industrial Engineering.

Empowering Innovation

- Faculty Research and Innovation Awards

Distinguished Thesis Award

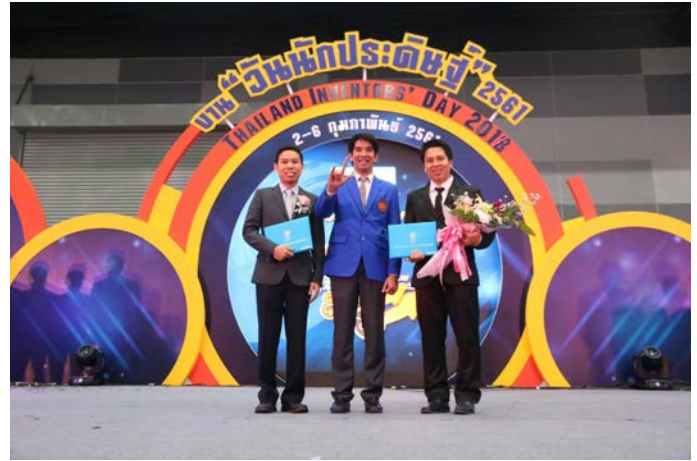
Dr. Wathit Pakpisut, Faculty of Engineering, won the distinguished thesis award in information technology and communication arts for his thesis "Design and Analysis of q-ary LDPC Codes and the Decoding Algorithms."

Dr. Prapan Leekul, PhD graduate from King Mongkut's Institute of Technology Ladkrabang, won the distinguished thesis award in information technology and communication arts for his thesis, "Microwave Sensor Using Transmission and Reflection Coefficients for Fruit Classification."

The award was presented by the National Research Council of Thailand (NRCT) at Inventor Day 2018, held on 2 February 2018 at BITEC Bang Na.

Gold Award from International Association for Universal Design 2017

Asst. Prof. Dr. Unthika Sawatsri, Dean of the Faculty of Architecture, won the gold award for the design and master plan for the "Chao Phraya for All" a project from the International Association for Universal Design 2017 on 9 March 2018 in Munich, Germany. The design incorporates public participation and facilities to enable the disabled and elderly to access the public space.



Research Article Award

Assistant Professor Dr. Kittiwat Sirikasemsuk, Faculty of Engineering, won the "Best Paper Award" at the Operations Research Network of Thailand 2018 (OR-NET 2018): Operations Research for Thailand 4.0, organized by the Department of Industrial Engineering, Kasetsart University, between 23-24 April 2018 at The Zign Resort, Pattaya, Chonburi, and the "Outstanding Paper Award" at the Rajamangala Manufacturing & Management Technology Conference 2018 (RMTC 2018) 2018, held between 29-31 May 2018 at Deevana Plaza Krabi Aonang.

Assistant Professor Dr. Somsri Bunditwilai and Assistant Professor Sirilak Anansathitsin, Faculty of Science, won the "Best Paper Award" for the paper titled, "Comparative Study of Three Time Series Methods in Forecasting Dengue Hemorrhagic Fever Incidence in Thailand" at the ISES International Academic Conference, organized by ISES International Institute of Social and Economic Sciences between 15-20 May 2018.

Mr. Samak Rakmae, a lecturer of the Faculty of Engineering, won the "TRF Outstanding Research Award 2017" for his commercial research "Salt Washer for Pickled Jellyfish." The award was presented by Air Chief Marshal Dr. Prajin Juntong, Deputy Prime Minister, on 23 May 2018 at the Swissotel Le Concorde Hotel, Bangkok.



Associate Professor Dr. Narathip Vittayakorn, Faculty of Science, and research team won the Best Oral Presentation Award for the paper titled, "Microstructural, Dielectric and Optical Properties of $[\text{KNbO}_3]_{0.9} - [\text{BaNi}_{0.5}\text{Nb}_{0.5}\text{O}_3]_{0.1}$ Perovskite Ceramics," authored by S. Sriphan, N. Vittayakorn, S. Kiravittaya, and T. Bongkarn and presented by Dr. Saichon Sriphan, a postdoctoral researcher in Advanced Materials Research Unit, Faculty of Science, at the Siam Physics Congress 2018 (SPC 2018), held between 21–23 May 2018 at Topland Hotel and Convention Center, Phitsanulok.



Associate Professor Dr. Pantani Pongsamphan, Faculty of Science, won the Best Poster Award for the poster titled "Transmission Model of HIV with and without Antiretroviral Drugs" at the 13th PATTAYA International Conference on Advances in Science, Engineering, and Technology (ASET-18) organized by Eminent Association of Research in Engineering & Technology on 7 August 2018.





Assistant Professor Dr. Kris Samorphitak, Faculty of Engineering, and Mr. Wiradej Pinthong, a master's student in automation engineering, Department of Instrumentation Engineering, Faculty of Engineering, won the "Best Paper Award" for the paper titled, "Real-Time Remote Monitoring and Alerting System Using Low-Cost IoT Platform for Odor Control Scrubbers" at the ICICIC 2018 (13th International Conference on Innovative Computing, Information and Control), held between 20–23 August 2018 in Lianyungang, People's Republic of China.

Dr. Wannaporn Sanprasert, Department of Mathematics, Faculty of Science, won the "Outstanding Poster Award" for the poster titled "Estimation of Yearly and Quarterly Loss Reserve for Voluntary Car Insurance in Thailand Using a Chain Ladder" at the 2nd National and International Conference on Education and Technology 2018 (ICETII: Critical Innovation) organized by Roi Et Rajabhat University on 26 July 2018.



Excellent Huawei ICT Academy Instructor Award
Assistant Professor Dr. Naphat Sraiam, Faculty of Engineering, won the Excellent Huawei ICT Academy Instructor Award from Huawei Authorized Information and Network Academy (HAINA), a partnership between Huawei and leading education institutions around the world, on 15-16 May 2018 in Shenzhen, China.



First Runner-Up Award

Dr. Kunchai Kuntawanit and Dr. Rattama Rattanawongsa won the first runner-up in the general public over 26 years old category in the PR media contest, "Red Cross Emblem: A Symbol of Protection and Hope," organized by the Thai Red Cross Society at Chumbhot Rooms 1-2, National Blood Center. The contest aimed to provide knowledge and understanding about the use of the Red Cross emblem through PR media that is appropriate and understandable for the general public.

Student Achievement

Ms. Parina Nooket, a fourth-year student, Faculty of Engineering, received the Royal Medal for Outstanding GPA 3.98 from the Engineering Education and Research Fund under Crown Prince Vajiralongkorn Patronage on 28 December 2017.



Students from the Department of Agricultural Communication, Faculty of Agricultural Technology, won the Princess Maha Chakri Sirindhorn Award in the infographic and video clip competition "Power Brand for New Blood 2016-2017" organized by National Blood Service Center, Thai Red Cross Society and Brand's Suntory (Thailand) at Dusidalai Hall, Chitralada Royal Villa, Dusit Palace, on 2 August 2018.



- Ms. Thiprada Pinkaew and Ms. Vasinee Siripridajit won the winning award for the infographic, "The More You Give, the Healthier You Get."

- Mr. Sivakorn Namthong, Mr. Akkaraphong Duangphibun, and Ms. Arisara Phuphan won the award for the blood donation campaign video clip.



Mr. Pathompong Prasomsing, a graduate student from the Faculty of Science, won first prize and received a trophy from HRH Princess Maha Chakri Sirindhorn and scholarships for the poster presentation titled "Passwire: A Password Manager Using Graphical Master Password" at the Innovation for Defence Technology Contest 2017 (IDT2017), organized by the Artificial Intelligence Association of Thailand, Defence Technology Association, and Mahidol University, on 15 November 2017 at Mahidol University, Bangkok.



Mr. Phichan Ditthachot, a third-year student from the Faculty of Engineering, was selected as the Talented Youth Class 8/2017. The award recipients were selected from young people with good behavior and good grades aged between 15-22 years from every province, one recipient from each province and three recipients from Bangkok, totaling 80 recipients. They received a pin and certificate from HRH Princess Maha Chakri Sirindhorn on 23 February 2018 at Chaipattana Building in Dusit Palace.

Four students from the Faculty of Engineering, Ms. Kanjana Chairit, Ms. Manatsamon Thilertpanich, Ms. Saowapa Chantararat, and Ms. Yaowara Phanhiran, received the Certificate of Good Conduct 2018 from the Buddhist Association of Thailand under Royal Patronage. The certificate was presented by Professor Atniti Ditamnat, Privy Councilor, at Monk Training Hall, Wat Samphraya Worawihan, Bangkok.

Faculty members and students from the Faculty of Engineering won three awards at the Huawei ICT Competition 2018, held between 15-16 May 2018.

- HAINA Center, Department of Telecommunications Engineering, won the Huawei Excellent ICT Academy Award.
- Assistant Professor Dr. Naphat Sraiam won the Huawei Excellent ICT Academy Instructor Award.
- Mr. Thirawat Suprapakorn, Mr. Phabot Kraikrittayakul, and Mr. Phanuphong Ruamchit won the Outstanding Performance Award.





A student team, "Nited Kaset Film," from the Faculty of Agricultural Technology won the award in the higher education category for the film titled "Be I Lift" at the Short Science Film Competition, organized by the Ministry of Social Development and Human Security, Thai Health Promotion Foundation, Children and Youth Council of Thailand, and Stop Gambling Foundation on 10 June 2018 at SF World Cinema, Central World, Bangkok. The team members consisted of Mr. Sathapanik Wattaraek, Mr. Nawachon Saithong, Mr. Nalik Suksawang, Mr. Seriphap Sornpho, and Ms. Petcharat Phupradab.

A student team, "555 Plus," from the Faculty of Engineering won the first runner-up for the project titled "Cyber Security" at the KPMG Cyber Security Challenge 2017 at the CCEC Center in Kuala Lumpur, Malaysia. The team members consisted of Mr. Methasit Rinthorn, Mr. Kamonnop Arunrat, and Mr. Thatorn Seangsomrueang.

Ms. Apichaya Mingkhwan, a third-year student from the Department of Telecommunications Engineering, received the 13th Outstanding Bangkok Youth Certificate and Trophy (Prakaipetch) for the second consecutive year. The award was presented by Mr. Thaweesak Lertprapan, Deputy Governor of Bangkok, at the Bangkok Youth Award Ceremony, organized by the Bangkok Youth Center (Thai-Japan), Culture, Sports, and Tourism Department on 18 August 2018 at Sports Building 2, Bangkok Youth Center (Thai-Japan).

Mr. Sophonphakon Sutthikhao and Ms. Patsara Chanchotisathian, second year students from the Faculty of Engineering (International Program) won the first runner-up at the TURTLE BOT Competition, held between 5-6 July 2018 in the Thailand Digital Transformation Exhibition ITC-CSCC 2018 at Phra Kaew Pavilion, Chulalongkorn University.



Mr. Nalik Suksawang, Ms. Petcharat Phupradab, and Mr. Sittichai Suksamran, students from the Faculty of Agricultural Technology, won the first prize in the Green-U RUS Contest, held on 31 August 2018 at Sripittayakarn Conference Room, 2nd Floor, Sripittayakarn Building, Rajamangala University of Technology Suvarnabhumi, Phra Nakhon Si Ayutthaya Center (Hantra).



A student team, "My Sufficient Life," from the Faculty of Agricultural Technology won the 1st prize for the "Sufficiency Agriculture Project in the Flooded Area" model in the King's philosophy model competition. The team consisted of Mr. Kiatisak Pinthong, Mr. Sarawut Sueanoi, Mr. Supanya Mariket, Mr. Thanawat Juathong, Mr. Chakkrit Thetim, and Mr. Suthipong Somjaiwang.





Mr. Thammanat Wanset, a student from the Faculty of Agro-Industry, won the first prize in the main dish for the project, "Using Thai Rice to Create Seafood Risotto Menu" and Mr. Thibet Sikularb, a student from the Faculty of Agro-Industry, won the first runner-up in snack or dessert for the project, "Using Thai Rice to Create All Rice Menu," at the Rice Plus Award 2018 organized by the Department of Foreign Trade, Ministry of Commerce.

- **Intellectual Property Registration of Research**

In 2018, there was one research project registered for national patent, two projects registered for petty patent, 12 projects registered for copyright, and three projects registered for trademark. The research registered for invention patent was "Piezoelectric Energy Harvesting Device Using an Impulsive Force" by Assistant Professor Dr. Don Isarakorn from the Faculty of Engineering. The research registered for petty patent were "Water Pushing and Aeration Device Using Floating Pump System for Fish Farming" by Mr. Woraphong Nalinanon and Dr. Saichon Lertsuwan from the Prince of Chumphon Campus and "The Process of Drying Germinated Brown Rice Using a Combination of Infrared Ray and Hot Air" by Assistant Professor Dr. Jiraporn Sipinyovanich Jongyingcharoen and Assistant Professor Dr. Ekkaphong Chiwitsophon from the Faculty of Engineering. The 12 projects registered for copyright included art projects, mobile software, and computer programs for database management.

Next Society

3 GOOD HEALTH AND WELL-BEING



4 QUALITY EDUCATION



5 GENDER EQUALITY



8 DECENT WORK AND ECONOMIC GROWTH



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



10 REDUCED INEQUALITIES



11 SUSTAINABLE CITIES AND COMMUNITIES



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



13 CLIMATE ACTION



16 PEACE, JUSTICE AND STRONG INSTITUTIONS



17 PARTNERSHIPS FOR THE GOALS



"พระจอมเกล้า"
ลาดกระบัง



At the heart of being a sustainable development organization is to create a unified society and culture for effective development. There must be adherence with Policy Step 1: Good Governance and Management and Step 5: Quality of Life and Harmony that focus on organizational management, human resource management, and financial management which emphasizes on organization administration while also taking into an account of consideration of the community, society, and the well-being of students and personnel.



Organizational Management

Principles of Good Governance

In managing the institute, KMITL complies with the principles of corporate governance as follows:

Effectiveness

- Improve the institutional management structure to ensure clear and flexible management. Divide the management structure into two areas: academics and students, and finance and resources. Both senior vice presidents who are in charge of these two areas are authorized to act as if they were a president, resulting in more comprehensive and timely management within the area.

- Prepare the President Action Plan 2018.
- Prepare the Strategic Plan 2017-2027 and Institute Management Plan.

- Prepare the Annual Performance Certification.

- Monitor and evaluate performance on a monthly basis and report the results to the institute's Board of Directors, Council Committee, and KMITL Council every 6, 9, and 12 months. Use the comments and suggestions to improve the performance in next year.

Efficiency

- Develop resource efficiency policies, such as office supply purchases, two-sided paper campaign, and security, cleaning, and vehicle rental service procurement.

- Calculate unit product cost and subject cost to analyze the break even point of income and expenses.

Responsiveness

- KMITL participates in solving community and social problems, such as establishing the KMITL Police Station, providing academic services to communities, opening a smart surveillance research center, developing ecotourism, and promoting clean farm products in Mueang Lang Suan Municipality, Chumphon.

- Use the information obtained from the survey of entrepreneurs, students, staff, and surrounding communities to develop a service development plan aligned with stakeholder needs, such as integrated services and online services.

Accountability

- Announce and communicate policies, vision, strategies, and a procurement plan for the institute to the public through www.kmitl.ac.th.
- Prepare the annual action plan to set targets and responsible persons for projects and/or activities.
- Disclose the action plan implementation report to the public.
- Conduct a survey of stakeholder satisfaction and/or needs, including entrepreneurs, current students, and alumni to obtain information for developing the institute development plan and/or service plan, such as determining the desired characteristics of graduates.

Transparency

- Disclose the financial statements in the annual report.
- Disclose the procurement and investment report in accordance with the principles of Integrity and Transparency Assessment (ITA).
- Request for quotations and bids in strict compliance with the rules through relevant agencies, such as the Government Public Relations Department, Business News Center Company Limited, Mass Communication Organization of Thailand, and State Audit Office of the Kingdom of Thailand.
- Open opportunity for third parties to inspect the operation as appropriate.
- Recruit executives in a transparent and accountable manner according to the procedures and regulations of the institute. Evaluate the performance of executives every year.

Participation

- KMITL listens to opinions of staff regarding matters such as regulations on the selection of members of the KMITL Council and management of welfare, environment, and quality of life at the institute.
- Invite external qualified persons to participate in the curriculum development process.
- Invite representatives of organizations around the institute to participate in important activities, such as the Memorial Day (the Death Anniversary) of King Mongkut, KMITL Anniversary, and Science Day.
- The President and the executives' meetings with staff from departments and other units to listen to their opinions and suggestions about the development of the institute and departments.
- Promote more coordination and cooperation between the central administration

Decentralization

- Redistribute authority and administrative power among different levels of administrators, such as Vice Presidents, Assistants to the President, Deans, and Directors, to allow them to oversee the management of their line of work.

- The President communicates vision and policies to executives at all levels to ensure that operational planning is in the same direction. The President and the Office of Strategy Management visit every faculty annually to listen to problems and obstacles in operation in order to find solutions.

- Produce a new generation leaders with good governance practices. Develop and prepare personnel to advance to management positions or management positions at higher levels through leadership programs, such as Talent Management for Excellence, Lower Intermediate, and Higher-Level Executive Programs, and Dean Training on Budget, Accounting, and Finance Program.

Rule of law

- Revise and improve regulations, rules, and notifications, such as the KMITL Notification on Annual Budget Allocation Policy and Rules (No. 2) B.E. 2559, Notification on Education Fee Rates, and Notification on Rules and Rates of Compensation, Travel Allowance, and Accommodation Allowance for Internal Education Quality Assessment.

- Appeal and complaint channels.

Equity

- KMITL provides equal opportunities for the general public to receive services from the institute, such as students with disabilities, underprivileged students, expansion of educational services to Chumphon province, and employment of disabled employees. It also provides facilities to facilitate campus life.

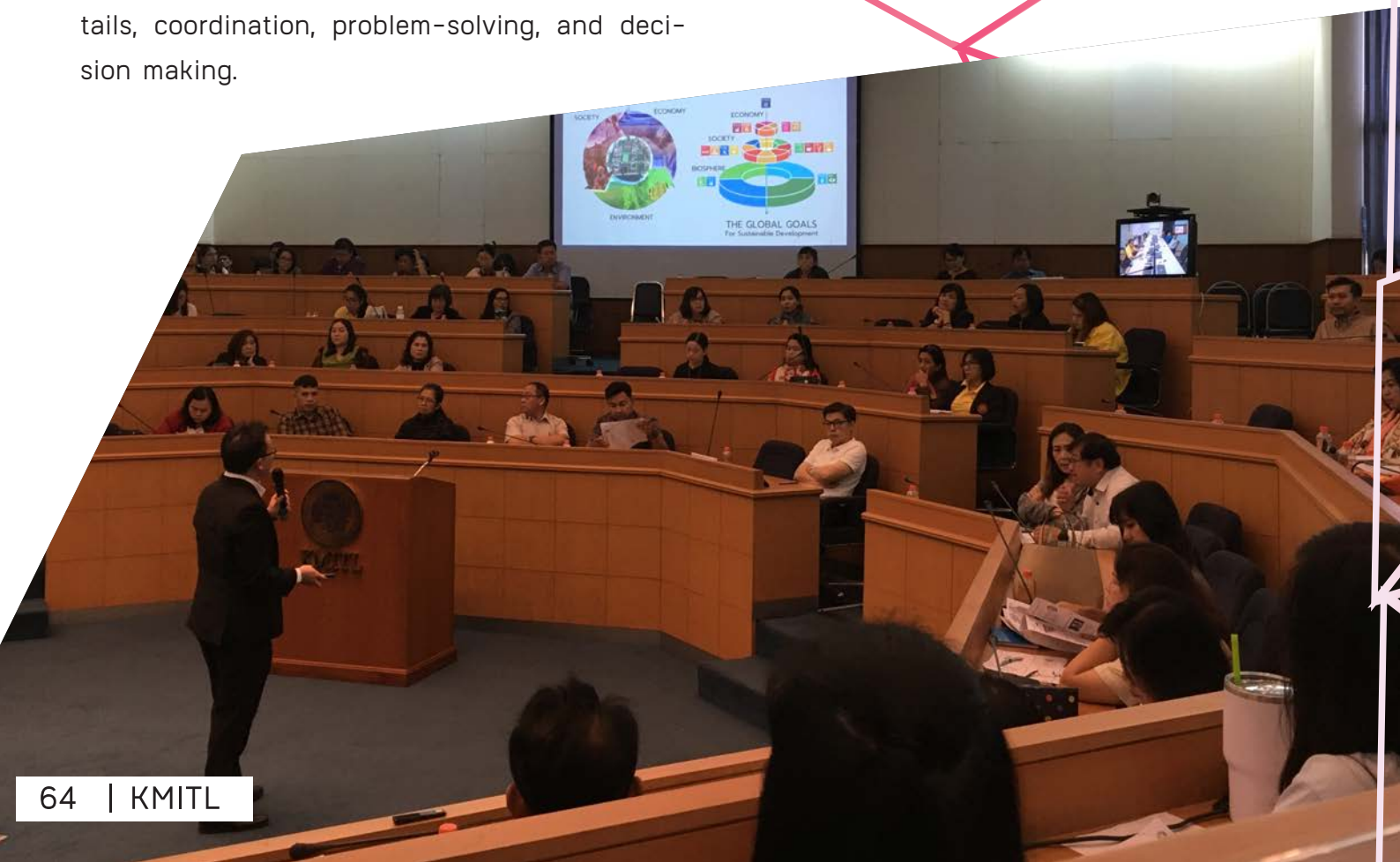
Consensus Oriented

- KMITL adheres to consensus principles, allowing both internal and external parties to participate in its operations to ensure mutual agreement. It has established committees to consider matters at meetings, such as a workshop on performance-based budgeting system (PBBS), executive meetings, and council committee meetings to discuss with and listen to the opinions of the executives from the institute and academic division and propose an agenda to the KMITL Council to pass a resolution to be complied with by all units within the institute.

Human Resources

In addition to academic management, "human resources" are the key to drive the institute to achieve its vision. KMITL has therefore enhanced the quality of life for staff by improving the following rules/benefits:

- Set/improve human resource management rules, such as employee welfare (budget and revenue).
- Regulation on Welfare Fund, Remuneration, and Benefits for Revenue-Based Employees B.E. 2560 to use the money from the fund to pay for wages, remuneration, compensation and other expenses for revenue-based employees.
- Performance-based payment (PBP) to increase work efficiency and ensure fairness in pay raises for academic staff.
- Core competency and functional competency to develop and evaluate support staff. Core competency includes integrity, being outcome-oriented, responsibility, teamwork, and systematic planning. Functional competency includes good service, continuous learning, attention to details, coordination, problem-solving, and decision making.
- Require support staff to prepare a job description.
- Improve a division head assessment system. The President acts as a chairman of the assessment committee and division heads prepare an operating agreement to establish an assessment framework and good faculty report (GFR).



Procurement

- Analyze and identify risks more clearly, such as a conflict of interest in procurement, as part of preventive risk management and set KPIs for evaluating integrity and transparency.
- Projects with large investment budgets, such as a strategic project, will be managed by the central administration.
- Collaborate between the central administration and academic division.
- Organize training sessions for project directors and relevant officials to ensure speed, accuracy, and completeness in disbursement and prevent delays.
- Conduct an assessment according to a plan and set KPIs for a dean assessment.
- Develop a professional auditing system by hiring an internal audit specialist as a consultant and requiring personnel to receive training in the Certified Government Internal Auditor Program (CGIA) offered by the Comptroller General's Department and Institute of Internal Auditors of Thailand.

Finance and Budget

A performance-based budgeting system (PBBS) is one of the instruments for the institute's technological reform. KMITL has improved the existing budgeting system to be more appropriate and consistent with the KMITL Strategic Plan (2017-2027) and increase the management efficiency, quality, transparency, and fairness.

- Appoint a financial and accounting consultant to provide advice. Improve the online financial audit and set clear procedures.
- Prepare a long-term budget plan.
- Request approval of the 1+3 (Mid-term) plan and appoint an external committee to participate in project consideration.
- Improve relevant regulations.
- A faculty must revise its plan to be aligned with the KMITL Strategic Plan.
- Focus on strategies.
- Create revenue and value-add from assets, such as the student dormitory renovation project, sports center service improvement project, and appointment of a fund-raising committee.
- Generate additional income from fund raising to support student and institute development.



Social Innovation

Training & Academic Services for Communities

Nowadays, Thailand has become a society of technology and innovation, which are considered as the basic tools for economic and social development. KMITL is fully committed to support and contribute to sustainable social development. It has continued to develop a number of researches and innovation-based programs to meet the needs of the society.

In 2018, KMITL launched 68 training and educational projects with a total project value of 13,603,055.94 baht to train and educate students, staff, and the general public, encouraging them to apply and make use of their knowledge for optimal benefits. It has also provided academic and research services to various government agencies, state enterprises, and private companies. In the same year, KMITL secured academic and research service contracts with the total value of 785,018,507.60 baht, including consultancy services valued 387,236,521.40 baht, research projects valued 391,211,152.20 baht, and analysis commissioning,

and testing services valued 6,570,834.00 baht. Until today, KMITL still provides a comprehensive range of consultancy services to government agencies. It receives more than 90 percent of its research funding from the government, with the remaining 5 percent and 4 percent coming from state enterprises and private organizations, respectively. The analysis, commissioning, and testing services come mainly from private organizations. The goal of KMITL's academic and research services is to be a part of contributing to Thai people to acquire knowledge, ability, and skills aiming for a successful career and life. KMITL has provided pieces of advice and taken part in national development projects as follows:

Capacity Building

KMITL has established the Inclusive Designed Environment and Research Unit (IDEaR) to improve the quality of life and create an equal environment for all, focusing mainly on people with disabilities. The unit aims to promote a better quality of life and happiness for everyone living together in the society. After getting the official operations started in 2014, the unit had managed to begin with learning processes, followed by brainstorming sessions in 2015 to be concluded in 2016, while sustainability development was scheduled to be continued in 2017 and 2018. In addition to organizing training, the unit has established a service center for the disabled and public spaces for all people across the country, following the successful model implemented previously in Nakhon Sawan province.

In addition, KMITL has organized events or activities that allow the general public and public and private sectors to participate in, such as:



1. Thai Labor Productivity Improvement Project, in collaboration with the Institute for Skills Development, Ministry of Labor. The project was open for the general public and aimed to improve labor productivity in production and services to increase production or service cycles, as well as reduce losses, by developing a STEM workforce.



2. The International Seminar on Technology for Sustainability 2018 (ISTS 2018), in collaboration with KOSEN Institute, Japan, with over 150 students from five countries participated to compete in organizing innovative business activities.

3. Research Cluster Support Project 2019 has academic staff including lecturers, researchers, students at all levels, and entrepreneurs who participated to learn about guidelines and perspectives on research funding and knowledge exchange, also build a network to create opportunities to develop research and innovation together.

4. The 14th Asian Regional Conference: "Sustainable Development Goals in Asia."

5. The 4th National Conference in Applied Arts (NCAA 2018).

Youth

1. The Young STEM Entrepreneur & Student Exchange Program was open for the third batch of youth aged 9-14 years old. STEM education is believed to be the answer to human development at the present time. The program is a collaboration between the Faculty of Liberal Arts, King Mongkut's Institute of Technology Ladkrabang, Penang Tech Center Bdh, Malaysia and Thailand Global Entrepreneurship. It aims to build a STEM and digital marketing foundation for young people to improve their knowledge and skills that will enable them to develop innovation for international entrepreneurs in the future.

2. Training program to develop math skills and knowledge for secondary school students at Municipal School 1 (Ban Tha Taphao), Prince of Chumphon Campus.

3. Training program to improve presentation skills in English for students of Assumption Convent Silom and Assumption Convent to enable them to apply presentation skills to compete internationally. The program is a collaboration between the Faculty of Liberal Arts, King Mongkut's Institute of Technology Ladkrabang and Assumption Convent.



Agriculture and Food

1. Nanotechnology for Agriculture Training 2018: "Nanotechnology Controls Plant Diseases, Increases Productivity, Increases Income for Farmers."
2. Academic Service Project on Product Processing from Red Lotus and Rice "Red Lotus Stem Cake, Lotus Root Jelly, Red Lotus Stem Jam, Caramelized Shredded Red Lotus Stem, Lotus Root Krayasat."
3. KMITL Street Food Chumphon



Community and Society

Innovations developed by KMITL for the benefit of society and natural disaster response planning include:

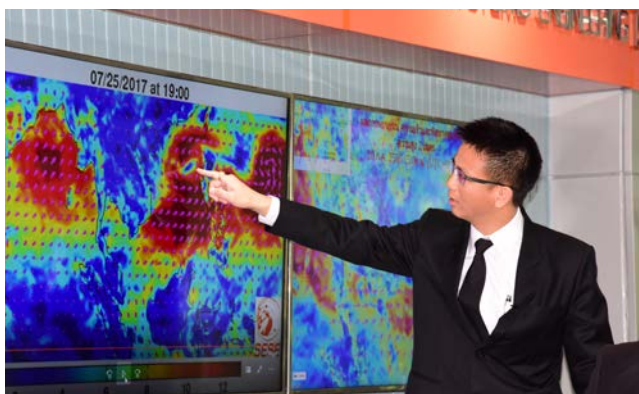
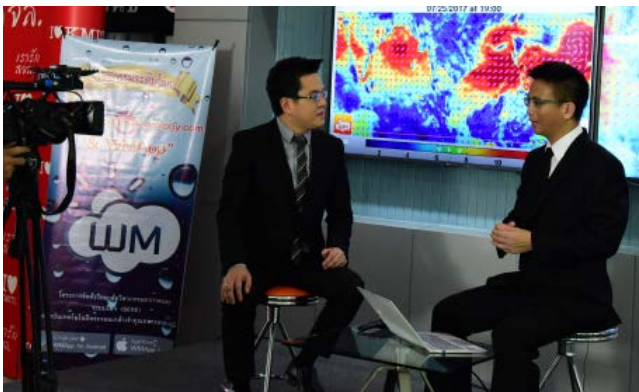
"iAmbulance" is an application designed to locate emergency ambulances, with its highly reliable notification system and road direction function. "Road Surface" is an application specializing in reporting conditions of the road surface, where drivers can always rely on the real-time reporting of different road conditions. These projects have been achieved by the collaboration between King Mongkut's Institute of Technology Ladkrabang and Ramkhamhaeng University.



Dr. Kriangsak Khaoniam has been recognized as the leader of the Road Surface research team, while Dr. Wiboon Piyawattanametha is also admired for successfully spearheading the iAmbulance development team. Both applications can be downloaded from the Google Play Store.



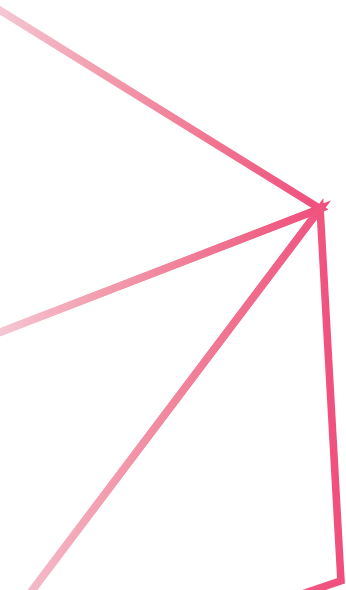
"WMAApp", redirected from World Meteorology Application, and www.worldmeteorology.com have been developed by Assistant Professor Dr. Chinnawat Surasawadi, Department of Telecommunications Engineering, Faculty of Engineering, who oversees the establishment of the College of Space and Earth Systems Engineering (SESE). The application and website provide highly accurate and detailed weather forecasting for Southeast Asia and Europe. They are able to deliver high-resolution weather forecast five to six days in advance, which can also be connected to Google Maps. They are not only useful for people's everyday life, but also beneficial for those related to the agricultural, tourism, and industrial sectors, including the renewable energy industry, fishery, marine transportation, and ASEAN tourism. In addition to helping tourists to make convenient travel plans, they can also be used to advise cautions on natural disasters in advance to minimize economic and social damage. The application and website are easy to be used for both iOS and Android.



The Underground Downtown Bangkok Monkey Cheek Model Project is being developed by the Smart City Innovative Research Academy (SciRa) under the supervision of Professor Dr. Suchatvee Suwansawat, President of KMITL. It is a pilot project aiming to construct an underground reservoir with a capacity of 100,000 cubic meters covering an area of over 130 rai (208,000 square meters) of Benchakitti Park in Yan-nawa, Khlong Toei, Wattana, and Sathorn Districts. In addition, a monkey cheek area has also been designed for alleys, such as Soi Mahad Lek Luang, Ratchadamri Road. The monkey cheek project requires a small investment but can manage flood problems effectively. This project will be submitted to the government for further consideration.



KMITL has conducted projects in collaboration with officials in the planning and development of housing for the local community. KMITL collaborated with the National Housing Authority in a research project to study a housing design with energy, water, and waste management for low- and middle-income families. Another project is the study to develop energy efficiency standards for housing, which is a collaboration between KMITL and the Department of Alternative Energy Development and Efficiency, Ministry of Energy, to develop energy consumption criteria in houses to be used as references for promoting energy-efficient housing suitable for Thailand.



Projects that have a large impact on society and communities include "A Study on the Social Impact of High-Speed Railway Bangkok-Nong Khai." The railway is capable of handling speeds of up to 250 km/h to connect to the railway projects in the Lao People's Democratic Republic and China, which will greatly benefit Thailand's transportation, economy, and tourism. Under this project, KMITL, together with five other educational institutions, will serve as a central administration to manage the technological transfer, industrial development, research and development, standards and commissioning, and personnel development.

Also, there is a project called "A Study and Analysis of Procedures and Design of Information System to Support the Operation of the State Railway of Thailand" for the State Railway of Thailand.

Projects with climate change action plans conducted with external organizations or communities include:

- "The Development of Air Quality Measurement and Management under Smart City Concept: A Case Study of Open and Public Spaces in Bangkok" in collaboration with Bangkok Metropolitan Administration.

- "The Development of Automated Surface Water Quality Monitoring and Database Systems to Solve Saltwater Intrusion Problems in Bang Kachao, Samut Prakan" in collaboration with PTT Digital Solutions Co., Ltd. and the Faculty of Economics, Rangsit University.



Corporate Community

In addition to academic development, KMITL places the importance on encouraging students to participate in activities to promote and develop skills in their field of interest. Students can organize and participate in activities with the institute's staff in five areas, including:

1. Sports and health
2. Arts and culture
3. Academic activities that promote desired traits of graduates
4. Community service and environmental protection
5. Ethics and morality

1. Sports and Health



Sports and health activities aim to provide students with professional sports knowledge and skills, cultivate sportsmanship and teamwork, improve physical fitness and mental health, spend free time productively, and keep students away from drugs. As sports can help enhance KMITL's long standing reputation, they may include sports club activities, sports competitions between faculties and universities, and freshman sporting events. The goals of the sports activities, organized by the Office of Student Affairs and Alumni Relations, are to:

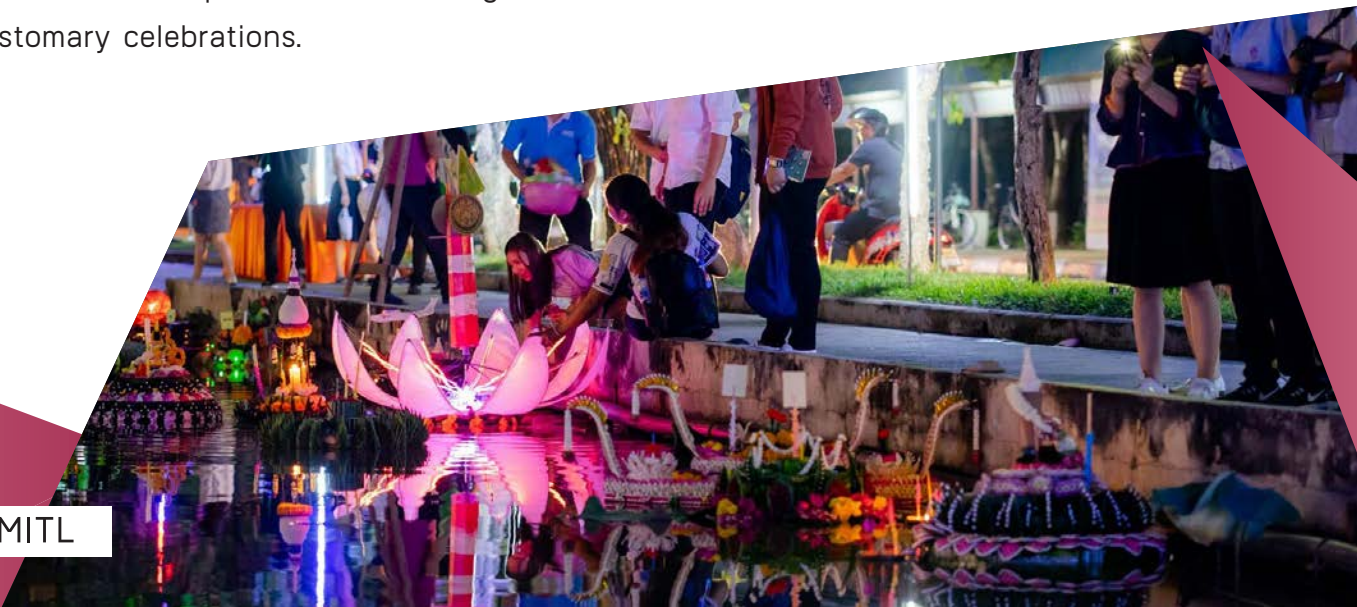
- 1.1 Provide students with professional sports knowledge and skills.
- 1.2 Cultivate sportsmanship and teamwork.
- 1.3 Foster positive attitudes towards sports as well as improve physical fitness and mental health.
- 1.4 Build unity and harmony among students, professors, and staff.
- 1.5 Relieve stress and promote a positive mood and peace of mind.
- 1.6 Enhance KMITL's long-standing reputation.

2. Arts and Culture

Arts and culture activities have been designed to preserve and promote the elegance and uniqueness of Thai arts, culture, and traditions while instilling pride and appreciation of Thai arts and culture in students. The activities have encouraged students to take part in preserving arts, culture, and local wisdom, varying in religious activities, exhibitions, traditional Thai dance shows, Thai and international music performances, folk games, and customary celebrations. The abovementioned activities, hosted by the Office of Student Affairs and Alumni Relations, are scheduled to be held on special occasions such as Teacher's Day, Songkran Festival, Loy Krathong Festival, and Buddhist Lent Day. The objectives of these activities are to:

2.1 Preserve and promote the elegance and uniqueness of Thai arts, culture, and traditions.

2.2 Instill pride and appreciation of Thai arts and culture in students and the general public, where arts and culture activities include traditional Thai dance show, Thai and international music performance, folk games, and customary celebrations.



3. Academic activities

Academic activities aim to promote academic operations of the institute. They may include training sessions and seminars to provide information on how to develop student activities to the institute's staff and relevant students, as well as procedures and guidelines for organizing and planning activities to build a good relationship and understanding among students.



4. Community service and environmental protection

Community service and environmental protection aim to promote integrity and positive mindset for students, teach students to help the underprivileged, work together as a team to gain hands-on experience, make sacrifices for the common good, use knowledge and skills to develop community and society, and develop leadership and followership. The goals of the activities organized by Student Affairs are to:

4.1 Encourage students to use their free time to benefit the public and communities and volunteer for rural development and environmental preservation.

4.2 Provide students with direct experiences that enable them to gain a true understanding of how society works and promote awareness of social responsibility, especially towards rural communities.

4.3 Build unity, responsibility, and a sense of self-sacrifice for the common good among students.

4.4 Train students to be good leaders and followers, work together as a team, learn to compromise, and listen to others.

4.5 Promote understanding and relationships between students, the public, and civil servants.

4.6 Encourage rural communities to recognize the importance of development and bring prosperity to their localities and make sacrifices for the common good.

4.7 Spread the name and reputation of the institute. Activities may include volunteer projects for community development, natural resource and environmental preservation, and proper use of natural resources, whether in a survey stage or implementation stage, in the following areas:

- Educational contributions, such as repairing school buildings, developing schools, sports fields, and educational equipment, and providing assistance with organizing libraries and using computer programs.

- Public utilities, such as building multipurpose halls, rainwater tanks, and ponds, and improving villages and other public utilities.

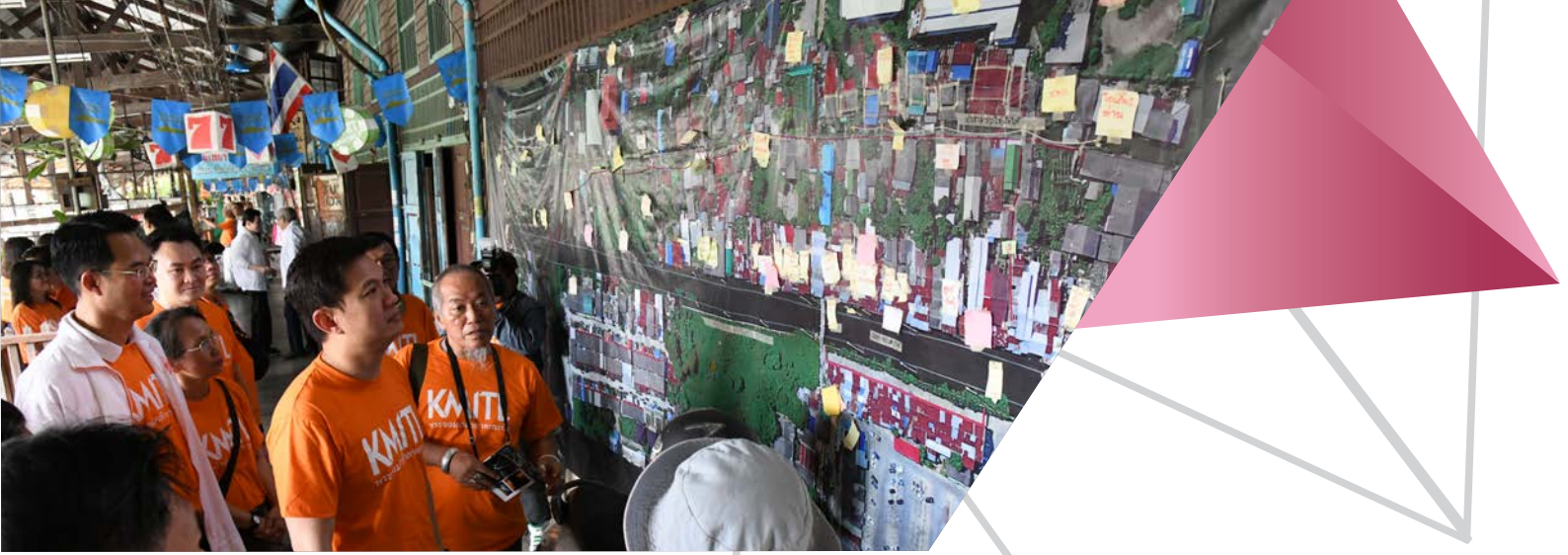
- Transportation, such as building and repairing bridges, roads, and public drains.

- Landscaping, such as public space beautification and service and advice on landscaping.

- Environmental preservation, such as reforestation, park development, providing knowledge on environmental preservation, and KMITL volunteer projects to improve and restore the environment in Ladkrabang.

- Public health, such as improving the well-being and hygiene of people in Ladkrabang, providing basic care by mobile medical units, visiting bedridden patients, general health check-up service, and providing health education knowledge with the KMITL volunteer project.





NEXT Action Volunteer Project to Develop "Ladkrabang Model" for the Hua Ta Khe Community

The project applied the "King's Model" of His Majesty The King Bhumibol Adulyadej to develop a holistic approach to the Hua Ta Khe community development. It attempts to build a good relationship between KMITL and the community and use the institute's resources to sustainably develop the community in five dimensions, including economic, environmental, health, educational, and social dimensions to create the "Ladkrabang Model" under the principles of "Understanding, Inclusiveness, and Development" and the Holistic Area Base to enhance the quality of life.

5. Ethics and morality

These activities aims to:

5.1 Develop traits of ethical and moral leaders for students.

5.2 Promote desirable values in society and the ability to adapt to and live happily in a changing society.

5.3 Build consciousness and sense of responsibility toward society and the nation among students. Activities may include meetings, training, and seminars to provide understanding, change attitudes and behavior, and develop leadership, morality, and ethics.



Next Environment

3 GOOD HEALTH AND WELL-BEING



6 CLEAN WATER AND SANITATION



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



11 SUSTAINABLE CITIES AND COMMUNITIES



12 RESPONSIBLE CONSUMPTION AND PRODUCTION




13 CLIMATE ACTION



17 PARTNERSHIPS FOR THE GOALS





The page features an abstract geometric design. In the top-left corner, there are several overlapping triangles and lines in shades of blue and teal. The bottom half of the page is dominated by a large, dark teal shape that resembles a stylized mountain range or a series of overlapping geometric forms. The text is positioned in the upper right quadrant, set against a white background.

The environment that promotes and maintains the health and well-being of staff and students is important and should be prioritized. King Mongkut's Institute of Technology Ladkrabang strives to create a pleasant and peaceful society and the environment in line with the Policy Step 4: Conducive Infrastructure and Step 5: Quality of Life & Harmony, which focuses on sustainable environmental management and green society.

Green Infrastructure



Landscape and Environmental Improvement

KMITL has built a pleasant, clean, beautiful, and safe landscape and environment to promote and maintain the wellbeing of students and staff, including the Rama IV Park, the institute's sign, Princess Maha Chakri Sirindhorn Building, Student Union, train station, road crosswalk, and footpath.





Green Building

KMITL is currently constructing two new buildings, Faculty of Education Building and Hitech Building, which have been awarded in the Energy Efficiency Building 2018. They are designed according to the Thai's Rating of Energy and Environmental Sustainability (TREES) standard certified by the Thai Green Building Institute (TGBI). The honorable award will be presented to energy-efficient and environmentally friendly buildings according to the green building standard.

Transportation

Because KMITL allows the public to use roads within the institute, it has improved entrance and exit roads, reorganized transportation, and set up campaigns to reduce traffic congestion and ensure the road safety of students, staff, and the general public, as follows:

1. Improve traffic within the institute by requiring vehicles make a U-turn in front of the President's Office Building to head to Ladkrabang Industrial Estate to make a U-turn under the bridge, closing the entrance road to the Student Union, and allowing the public to use the roads within the institute during rush hours between 07.00 - 09.30 in the morning and 16.00 - 17.30 in the evening.

2. Improve directional signs within the institute at 35 locations, including: 15 urgent traffic signs and 20 traffic signs.

3. Hold a meeting to discuss connecting a U-turn bridge on the motorway around KM 14 with the Department of Highways.

4. Develop and reorganize a public transportation system to service staff, students, and the general public. Set up three bus stops on Chalong Krung Road in front of the institute and a shuttle service between the institute and Airport Rail Link Station.



5. Conduct a pilot van shuttle project to study the sustainable development of a van shuttle service. Initially, the institute organized three vans for 11 trips per day to service students, staff, and the general public, from Monday to Friday, 8-14 passengers per round.

Schedule 1	Schedule 2	Schedule 3
08.00	11.00	16.00
08.15	11.15	16.15
08.30	11.30	16.30
08.45	11.45	





พื้นที่ให้บริการ KMITL BIKE

เพื่อความปลอดภัย สามารถใช้ได้ภายในบริเวณเส้นสีเขียวตามแผนที่เท่านั้น เช่น บริเวณรอบสนามกีฬา ตึก 55 D4, อาคารเรียนรวมสมเด็จพระเทพฯ, คณะบริหารและคณะไอที ห้ามจอดกีดขวางถนน

KMITL BIKE
KMITL community bicycle rental service for commuting within the campus. Easy to find and park anywhere. Download now, it's FREE!

NOW AVAILABLE

GRAB & GO
Easy to borrow with just 2-clicks

STATIONLESS
Ride anywhere, Park anywhere
Worry-free of stations

FREE
Free usage within KMITL campus

6. KMITL Bike is an eco-friendly project that allows students to borrow bicycles for traveling within the campus, thanks to the collaboration of the Faculty of Architecture, International College, KMITL Research and Innovation Services, and L.A. Bicycle (Thailand) Co., Ltd. The project's bicycle 'T-BIKE' was designed by Mr. Pawin Rutkiatkamchon, a lecturer of the Department of Industrial Arts, Faculty of Architecture, and the mobile application was developed by faculty members and students of the International College under the 'Bike Sharing for Green University' concept. This project aims to reduce the use of personal vehicles that cause air pollution as well as encourage personnel and students to enjoy biking for exercise. With 15 service points available around the campus, KMITL also introduces the KMITL Bike application which compatible with both iOS and Android operating systems.

Green office

The Central Library recognized the importance of energy and environmental conservation and adopted the Green Office Policy on 26 March 2018 following the Green Office Standards Handbook published by the Department of Environmental Quality Promotion. This policy aims to improve the quality of the Central Library in line with the five-stage policy and the fourth strategy in the KMITL Strategic Plan to support the development of KMITL excellence, promote environmental well-being, and create a green university. The Central Library complies with the green office certification criteria in the following seven categories:

Category 1 Organization Management

- Environmental policy
- Operation planning (identification and evaluation of environmental problems, use of resources, relevant laws and regulations, duties and responsibilities)
- Review by management

Category 2 Operation of Green Office

- Environmental communication and training
- Meetings and exhibitions
- Cleanliness and order in the office
- Greenhouse gas management
- Transport and travel

Category 3 Energy and Resources

- Energy consumption
- Water consumption
- Other resources

Category 4 Waste and Wastewater Management

- Waste management in the office
- Wastewater management in the office

Category 5 Indoor & Outdoor Environment

- Air
- Light
- Noise
- Livability

Category 6 Green Procurement

- Office supply purchase and procurement

Category 7 Continual Improvement

- Projects and activities



After implementing the Green Office Project for almost six months, the Central Library applied for the green office certification from the Department of Environmental Quality Promotion, Ministry of Natural Resources and Environment in 2018. The Central Library was audited on Friday 3 August 2018 between 09.00-16.00 and received excellent scores. The Department of Environmental Quality Promotion conducted another audit on Friday 21 September 2018 to certify the Central Library as a green office, gold level.

After the audit, the Department of Environmental Quality Promotion issued the Letter Thor Sor 0805/Wor 1201 dated 15 November 2018 Regarding the Result of Green Office Audit 2018 Pursuant to the Resolution of the Meeting of the National Green Office Audit Committee on 7 November 2018 to certify that the Central Library of King Mongkut's Institute of Technology Ladkrabang has passed the criteria for green office certification (gold level). The Department of Environmental Quality Promotion held the award ceremony to give the National G-Green Plaque to the certified organizations on 30 January 2019 at Rama Gardens Hotel, Bangkok General Surasak Kanchanarat, Minister of Natural Resources and Environment, presided over the award ceremony to present the National G-Green Award. Assistant Professor Dr. Somsak Khuhasawanwet, Director of the Central Library represented the Central Library King Mongkut's Institute of Technology Ladkrabang in receiving the National G-Green Award at Rama Gardens Hotel, Bangkok.



Resource Management

Energy

The average electricity consumption of KMITL during 2017–2018 was estimated at 2,373,712.96 kilowatt-hours per month. The electricity consumption decreased during February–May 2018 compared to the same period in 2017 and KMITL was able to reduce electricity usage by up to seven percent in September 2018. KMITL has also improved KMITL Voltage Substation. Bang Phli Electricity Authority has inspected and tested all substation equipment and installed the new underground power line, control system, and network wiring. KMITL has conducted a research in collaboration with the Provincial Electricity Authority (PEA) to design a new power system in four zones, including the Office of the President, Faculty of Science – Faculty of Industrial Education, Faculty of Engineering – Faculty of Architecture, and Faculty of Agricultural Technology. It is expected that the new power system will be able to save up to 10 million baht per year. The power system improvement is scheduled to be implemented in six phases as follows:

Phase 1: Improve the 115 kv substation to supply power to the Office of the President zone.

Phase 2: Improve the 24 kv feeder system to supply power to the Office of the President zone.

Phase 3: Improve the 24 kv feeder system to supply power to the Faculty of Science – Faculty of Industrial Education zone.

Phase 4: Improve the 24 kv feeder system to supply power to the Faculty of Engineering – Faculty of Architecture zone.

Phase 5: Improve the 24 kv feeder system to supply power to the Faculty of Agricultural Technology zone and install underground power lines at the Faculty of Agricultural Technology Building and Chao Phraya Surawong Waiyawat (Won Boonnak) auditorium.



Water

KMITL has implemented many of water conservation projects with newly proposed guidelines to reduce water consumption, while ensuring water efficiency within the institute. For example, sanitary sensors are installed in restrooms to reduce water waste. A wastewater reuse program has also been launched to retain the use of treated wastewater in activities requiring less water purity, such as watering the lawns and plants.

Waste

KMITL has recognized the importance of maintaining environmental cleanliness, having a beautiful landscape in harmony with the natural environment, and promoting environmental consciousness. Several projects have been implemented to support the policy to transform the institute into a sustainable green university in line with the five-stage policy and the fourth strategy for becoming a green university as follows:

Waste classification project: As daily activities of personnel, staff, and students produce a large amount of waste, this project has been initiated to sort solid wastes, such as newspaper, A4 paper, crate, and plastic glass and bottles. The initial phase of the project focuses on cleaning working areas of each building to provide staff members with knowledge and understanding on proper waste classification, paving the way for efficient waste management.

Compost project: The compost project aims to produce compost from organic wastes, such as leaves and grass, to reduce the cost of fertilizer and make good use of waste materials. The compost will be used as fertilizer for plants to restore and maintain soil fertility enriched with organic matters. If a large amount of compost can be produced, it can be distributed to members of KMITL and nearby communities for household use or distribution to





Effective microorganism project: The project emphasizes on the use of organic and food wastes to develop effective microorganisms to be used for wastewater treatment and water quality improvement in the institute. In addition to the reduction of waste disposal cost, the project also helps minimize air pollution and chemical contamination in wastewater.

EM ball project: This project aims at producing EM balls, consisting of rice husk, rice polish, rough rice molasses, soil, and EM, to be used for wastewater treatment. EM balls help decomposing organic matters in wastewater before being released to natural water resources. The project is part of the environmental and social responsibility efforts characterized by the institute.

The Faculty of Science's toxic waste management policy aims to manage toxic wastes and other types of wastes obtained from research activities by collecting and sending them to a company specialized in toxic waste disposal.

Responsible Consumption

Beat Plastic Pollution

King Mongkut's Institute of Technology Ladkrabang has implemented a policy and various projects to reduce the use of plastics in 2018 and raise awareness of the danger of plastic to living organisms, including aquatic animals. These projects also build environmental awareness among students and personnel and encourage them to become a socially and the environmentally responsible consumer in line with the UN's "Beating Plastic Pollution" goal and Sustainable Development Goals. KMITL has collaborated with organizations and agencies, such as the Sustainable University Network of Thailand and CP All Public Company Limited, to reduce the use of plastic as follows:

1. Cancel the use of plastic bags, except for hot items. Sell or have cloth bags to borrow instead.
2. Set up a plastic bag donation point in front of a convenience store (reusable plastic bag).
3. Reduce plastic cup waste. Convenience stores offer discounts for customers who bring their own cups.
4. Reduce the use of plastic utensils and straws. Convenience store clerks will always ask customers first whether they need plastic utensils or straws.
5. Cancel the use of foam containers in both convenience stores and the institute's canteen.
6. E-Office', an office platform is used for managing documents online via digital document instead of papers which reduce paper consumption up to 44 percentages per month.

คุณรู้หรือไม่ว่า?

ถุงพลาสติก 1 ใบ
ใช้เวลานานกว่า 450 ปี



สจล.พร้อมใจ
งดใช้ถุงพลาสติก

KMITL
NEXT

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#สำนักงานบริหารและพัฒนาองค์ความรู้

NEXT is Clean

'ที่นาคี..ที่ใช้จาน..
ที่ร้อยปี..ที่ย่อยสลาย'

หลอดพลาสติก 450 ปี

แก้วพลาสติก 450 ปี

ถุงน้ำแข็ง 20 นาที

สจล.รณรงค์
ลดการใช้..
'แก้วพลาสติก'

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#สำนักงานบริหารและพัฒนาองค์ความรู้

NEXT is Clean

กระติกน้ำพกพาแทนขวดพลาสติก

ยืมขวดน้ำส่วนตัว "แก้ว" ที่พกไป..
ปิดจุกมิดใจ..ลดการบริโภคพลาสติกได้เป็นล้านชิ้นนะจ้า

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#สำนักงานบริหารและพัฒนาองค์ความรู้

NEXT is Clean

'No plastic straw'

ถูกทิ้งทะเล 513 ล้านต้น
..จาก 20 ประเทศทั่วโลก..
เป็นปัญหาที่ดำและปลาวังไม่รับรู้

'ขบขงดหลอด'

KMITL NEXT

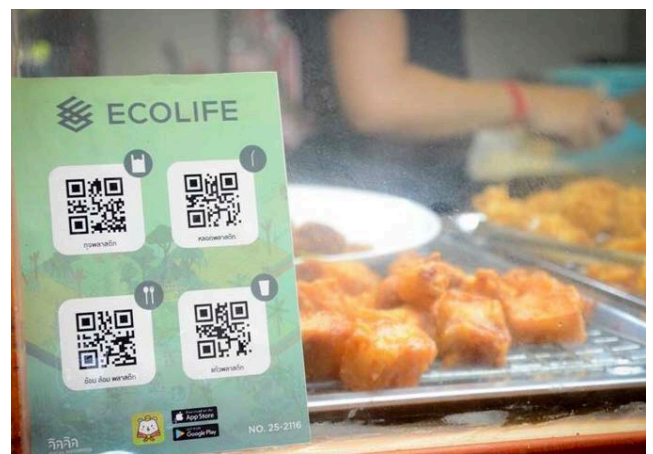
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#สำนักงานบริหารและพัฒนาองค์ความรู้



Moreover, KMITL has collaborated with Kid Kid Company Limited to use the "ECOLIFE" application in both convenience stores and other stores within the institute. Smart phones are very popular today and provide a convenient way to evaluate and measure operating results. This application will collect information about the use of plastic containers and utensils from the application's user. As a result of a serious campaign and public relations, KMITL was able to reduce the use of plastic bags in the institute's convenience stores by up to 50,000 bags per month.





Medical center

KMITL has established units to collaborate with public and private hospitals to provide medical services for the institute's students and staff.

Construct the KMITL Clinic to accommodate full medical service. The clinic has doctors and medical personnel to provide basic treatment, including general medical examination, special medical examination, psychiatrists, physiotherapy, emergency, procedures, wound dressing, removing stitches, injection, minor surgery, and general medical service.

Establish the Health Center in collaboration with Sirindhorn Hospital. The center has a fast track for referral to specialized hospitals.

Develop health services in the KMITL Clinic. The Office of the Permanent Secretary to the Ministry of Health has inspected the clinic and assigned a health service code as follows: 9-digit code 004137100 and 5-digit code 41371, KMITL Clinic. Faculty members of the Faculty of Medicine have collaborated with doctors from Sirindhorn Hospital to open specialized clinics at Sirindhorn Hospital, including a clinical cancer clinic and pediatric neurological clinic.



Facilities

- Construct additional student dormitories and renovate the existing student dormitories.
- Construct an eight-story 116-unit housing for staff.
- Fitness centers in the Faculty of Science and Faculty of Education.
- Improve the sports center to be cleaner and safer and provide additional equipment such as electric treadmills, elliptical trainers, and upright bikes.
- Provide a swimming pool service for students, staff, and general public.
- Build skywalks to connect main buildings within the institute.
- The Central Library provides services for students, personnel, and the general public.



Activities

- KMITL volunteer project, basic medical treatment, general medical examination, and providing health education to students, staff, and general public.
- Safe sex condom acceptance project (Safe Sex Accept Condom).
- Training on mental health problems for



KMITL Green University

King Mongkut's Institute of Technology Ladkrabang is committed to sustainable development of the organization, staff, and communities under the institute's policy and strategy framework that encourages staff and students to participate in university development. The development covers all dimensions, including academic, social, and environmental. Long-term sustainability is the key to international success and driving the institute to become a leading university in the ASEAN region and the world.

KMITL's sustainable development covers 12 Sustainable Development Goals: SDGs.



Next Education



Next Society



Next Environment





8 DECENT WORK AND ECONOMIC GROWTH 	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE 	10 REDUCED INEQUALITIES 	11 SUSTAINABLE CITIES AND COMMUNITIES 	12 RESPONSIBLE CONSUMPTION AND PRODUCTION 	13 CLIMATE ACTION 	16 PEACE, JUSTICE AND STRONG INSTITUTIONS 	17 PARTNERSHIPS FOR THE GOALS
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King Mongkut's Institute of Technology Ladkrabang

Sustainability Report 2019

Advisors

- | | |
|---|--|
| 1. Professor Suchatvee Suwansawat, Ph.D. | President |
| 2. Associate Professor Anuwat Jangwanitlert, Ph.D. | Senior Executive Vice President for Academic Affairs (Provost) |
| 3. Associate Professor Laemthong Laokhongthavorn, Ph.D. | Senior Executive Vice President for University Resources and Services |
| 4. Associate Professor Surin Khomfoi, Ph.D. | Executive Vice President for Planning |
| 5. Assistant Professor Ronnachai Tiyarattanachai, Ph.D. | Vice President for Planning |
| 6. Assistant Professor Chalida U-tapao, Ph.D. | Vice President for Buildings and Environment / Vice President for Information and Public Relations / Vice President for Property |
| 7. Assistant Professor Chodchanok Attaphong, Ph.D. | Faculty of Engineering |
| 8. Nutthapanee Sairattanain | Director of Office of Strategy Management |

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| 9. Sriprai Kasdee | Central Library |
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KMITL



BEYOND THE LIMIT



