CUSE

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# CUSE Newsletter

A semiannual newsletter of Regional Centre for Manufacturing Systems Engineering, Chulalongkorn University
(Chula Systems Engineering - CUSE)

## In This Issue



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## Message from the Director

Dear CUSE Community,
It is my pleasure to connect with all of you – our valued students, esteemed alumni, and dedicated supporters. As we continue to foster the next generation of Systems Engineering and Management leaders, I want to take this opportunity to highlight a core set of values that underpin our programme's philosophy. These values, captured by the acronym C.U.S.E., are the cornerstones upon which we build exceptional engineering managers:

•Creativity (C): The ability to think outside the box and generate innovative solutions is paramount in tackling complex systems challenges. We encourage our students to cultivate their creative spark, fostering a culture of exploration and experimentation.
•Utility (U): At CUSE, we emphasize the practical application of knowledge. Our graduates are equipped to translate theoretical concepts into real-world solutions that deliver tangible benefits to the society and the world.
•Synergy (S): The strength of a system lies in the harmonious interaction of its parts. We instill in our students the importance of international collaboration, teamwork, and effective communication to achieve optimal outcomes.
•Ethics (E): As engineers entrusted with shaping the future, upholding ethical principles is crucial. We demand our students to do their utmost to adhere to ethical values in all they do, as a matter of policy.

By nurturing these C.U.S.E. values, we empower our graduates to become not just technically proficient engineers, but also well-rounded individuals equipped to address the ever-evolving needs of our world. You will fine through this newsletter inspiring examples of how these values come to life in the outstanding work of our students, faculty, and alumni.
I am proud of the CUSE community's continued dedication to excellence. Together, let us leverage the power of C.U.S.E. to build a brighter future for all.

Sincerely,
Associate Professor Chuvej Chansa-ngavej, PhD
Director
Chulalongkorn University's Systems Engineering

# In conversation with Ms.Suchanart Niamsorn

Engineer, P C S FOUNDRY PRODUCTS CO., LTD.


I started the Engineering Business Management programme on September 1st, 2020. Throughout my academic journey, the three modules that I found most interesting were Financial Analysis & Control Systems (FACS), Organisations, People and Performance (OPP), and Service Support Technologies (SST). These modules allowed me to understand the fundamental concepts of doing business as well as explore new methods and alternative approaches to enhance business operations.

Moreover, the knowledge I gained from these modules has equipped me with new ideas that can be applied to my work context, which will contribute to the company's improvements and changes for responding to dynamic customer needs and achieving competitive advantages. As an engineer with limited business management knowledge and skills, I find that the CUSE-WMG programme offers a diverse range of engineering and business modules that apply relevant knowledge and tools outside my expertise to the class's case studies in various industries. The dual degree programme not only provides innovative teaching and learning methods by WMG instructors from the UK, but it also enables me to advance my academic studies and practical experiences for my future career path while working in Thailand.

## CUSE & WMG Executive Meeting

On February 27-28, 2024, Professor. Robin Clark (the Dean of WMG) and Associate Professor. John Michael Newton, one of WMG executives, visited the CUSE, ISE, and representatives from the Faculty of Engineering, discussing possible further collaborations between CU and WMG.


From left to right: David Nicol, Assoc. Prof. John Michael Newton, Prof. Robin Clark, Assoc. Prof. Dr. Chuvej Chansa-ngavej, Assoc. Prof. Dr. Pisit Jarumaneeroj.


From left to right:
Assoc. Prof. Dr. Witaya Wannasuphoprasit (ISE Director), Prof. Robin Clark.


From left to right:
Assoc. Prof. Dr. Pisit Jarumaneeroj,
Assoc. Prof. Dr. Natt Leelawat (Assistant Dean of International Affairs),
Prof. Dr. Tawatchai Charinpanitkul (Vice Dean of Academic Affairs),
Prof. Robin Clark, Assoc. Prof. John Michael Newton, David Nicol.

## CUSE Management Committees

On May 3, 2024, CUSE Management Team met and discussed the operations of CUSE in the previous academic year.


From left to right: Dr. Banpot Wattanasombat, Assoc. Prof. Dr. Angsumalin Senjuntichai (Department Head of Industrial Engineering), Assoc. Prof. Dr. Chuvej Chansa-ngavej, Professor Dr.Supot Teachavorasinskun (Dean of Faculty of Engineering), Prof. Dr. Parames Chutima, Assoc. Prof. Dr. Vachara Pheansupap, Asst. Prof. Dr. Attawith Sudsang (Department Head of Computer Engineering).

## CUSE's Board of Directors

On May 17, 2024, CUSE's Board of Directors met and discussed the operations of CUSE in the previous academic year.

From left to right: Mr. Viriya Trangadisaikul, Mr. Pichai Chooekawong,
Professor Dr. Wilert Puriwat (Dean of Faculty of Commerce and Accountancy),
Prof. Dr. Pakorn Adulphan (on the Zoom screen),
Prof. Dr.Supot Teachavorasinskun (Dean of Faculty of Engineering),
Assoc. Prof. Dr. Chuvej Chansa-ngavej,
Prof. Dr. Parames Chutima

# Commencement Ceremony

On behalf of His Majesty the King, Her Royal Highness Princess Maha Chakri Sirindhorn will graciously preside over Chulalongkorn University's Commencement Ceremony for the 2023 Academic Year on Wednesday 2nd, Thursday 3rd, and Friday 4th, October 2024.In this academic year, the CUSE has about 7 graduates and we would like to congratulate them on their success.



## Open House

Chulalongkorn University has held a virtual event "Open House for 2024 International Programs at the Graduate Level (PG Open House 2024)" on February 22-23, 2024. On this occasion, the Office of International Affairs (OIA) is delighted to invite prospective students who are interested in pursuing their graduate studies at Chulalongkorn University with in-depth information and details of the programs, as well as scholarships information.

Further information could be found at the OIA Facebook page: https://www.facebook.com/ChulaOIA.

# Chula Ranks No.1 in Thailand for 32 Subjects 2024

The latest results of the QS World University Rankings by Subject 2024 have been announced on April 10, 2024. Chulalongkorn University is ranked No. 1 in Thailand for 32 subjects and Top 200 in the world with 30 outstanding subjects.
Furthermore, Chulalongkorn University ranks first among Thai universities for 32 subjects across five broad subject areas.
The QS World University Rankings by Subject 2024 indicators include academic reputation, employer reputation, research citations per paper, H-index and international research networks with each indicator categorized differently according to the subject.

Find out more about the QS World University Rankings by Subject 2024 at https://www.topuniversities.com/subject-rankings
Source: https://www.chula.ac.th/en/news/154935/


Chula Communication Center (CCC)

Chulalongkorn University


Chulalongkorn University has clinched the top spot in Thailand according to the THE Asia University Rankings 2024, released on May 1, 2024. Among the 19 Thai universities assessed, Chulalongkorn University has surged 102 places from its previous ranking, out of a total of 739 participating universities (excluding those that did not meet the minimum criteria or were designated as 'Reporter' status).

The exceptional performance of Chulalongkorn University in THE Asia University Rankings 2024, placing the university at No. 1 in Thailand and 117th in Asia, is attributed to its outstanding performance across five key indicators: Teaching (24.5%), Research Management (28%), Research Quality (30%), Industry (Industry income and Patents) (10%), and International Outlook (7.5%).

For more insights into THE Asia University Rankings 2024, please visit the following link: https://www.timeshighereducation.com/world-university-rankings/2024/regional-ranking
Source: https://www.chula.ac.th/en/news/157620/


Learn more about the QS World University Rankings 2025 at: https://www.topuniversities.com/world-university-rankings

Chulalongkorn University has once again been recognized as the No. 1 university in Thailand, and the only Thai institution to secure a spot in the world's top 100 for Academic Reputation and Employment Outcomes, according to the QS World University Rankings (WUR) 2025, officially announced on June 5, 2024. Additionally, Chulalongkorn University is ranked as the top university in Thailand, 57th in Asia, and 229th globally among 1,500 higher education institutions worldwide in the QS WUR 2025.

The QS World University Rankings 2025 evaluate universities based on nine indicators: Academic Reputation (30%), Citations Per Faculty (20%), Employer Reputation (15%), Employment Outcomes (5%), Faculty/Student Ratio (10%), International Student Ratio (5%), International Faculty Ratio (5%), International Research Network (5%), and Sustainability (5%).

Source: https://www.chula.ac.th/en/news/164186/

# CU Award

Chulalongkorn University has held an annual event to honor faculty members who build reputation for the university on April 3, 2024. On this occasion, Prof. Parames Chutima, the CUSE senior advisor, has been awarded the prize for his success — namely, the best presentation award — in the 5th International Conference on Management Science and Industrial Engineering (MSIE 2023).

# Research Corner

by Assoc.Prof. Pisit Jarumaneeroj, the Secretary of CUSE

International trade is one of the most important global economic activities, whose value recently topped 30% of the world GDP in 2019 — a huge leap from the baseline of 13% in 1970, according to the World Bank. To accommodate global economic growth, especially in the emerging markets, maritime industry has undergone a series of technological transformations over the last two decades. The vessel size, for example, has tripled in size since the year 2000, to achieve higher levels of economies of scale, while port infrastructure has also been enhanced in terms of both efficiency and accessibility.

When combining these revolutions with economic conditions that forcefully change from time to time, the structure of the global shipping network — and so its topology — is dynamically evolving.

To better gain insights into the evolution of global container shipping network (GCSN), Assoc.Prof. Pisit Jarumaneeroj has investigated the GCSN evolution, from 2011 to 2017, based on two different information pieces — namely, port connectivity and trading community structure — each of which complements one another in explaining the GCSN. In this regard, the GCSN is first defined as a directed weighted network representing a snapshot of trade. The connectivity of ports and their respective trading communities at different time periods are then determined. With this proposed framework, related players would be able to understand the growth of GCSN, as well as the impacts of maritime occurrences on the network of container shipping. This is especially useful for the development of policies that will help enhance the strategic roles of ports in a more sustainable fashion.
Those who are interested in this paper may download the full paper via the following link without charges: https://doi.org/10.1057/s41278-023-00273-x.

## An Evolution of the Global Container Shipping Network: Port Connectivity and Trading Community Structure from 2011 to 2017

Port connectivity and trading community structure are two fundamental network characteristics that complement one another in explaining the evolution of maritime transport networks. Although port connectivity has been widely studied in the literature, the investigations on the latter are rather limited, especially in the weighted shipping network with economic data. To better fill this gap, this paper aims to provide a more complete picture of the evolution within the Global Container Shipping Network (GCSN), based on our earlier works published in MEL, where port connectivity and trading community structure are combined and emphasized under the same unified framework. In doing so, the GCSN representing a snapshot of trade at the end of each quarter, from Q3/2011 to Q3/2017, is first constructed. The connectivity of ports and their respective trading communities are then extracted by the Container Port Connectivity Index (CPCI) and the Louvain algorithm, respectively. Our computational results indicate that port ratings, as well as trading community structures, dynamically evolve; and, ports in East Asia consistently dominate others in terms of both inbound and outbound connectivity, led by Shanghai and other major ports of mainland China. Furthermore, the formation of trading communities largely depends on trading patterns — rather than geographical locations — which is evident from the insolvency and merger of communities in the North American region right after the expansion of the Panama Canal in 2016.

# Motto

Those who could think would thrive over those who could do.
Engineers, though, had better strive for both, i.e. Think - and do - as well.

Professor Phra Charoen Wisawakam
Longest-serving Dean of Engineering, Chulalongkorn University (from 11 June 1929 to 18 June 1961)