

COMMTECH CAMP 2025



2025

Presented by

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Mechanical and Aeronautical Engineering

Stream 1: Innovations in Engineering

21st July – 1st August 2025, ITS, Surabaya, Indonesia

ABOUT COMMTECH CAMP

Introduction

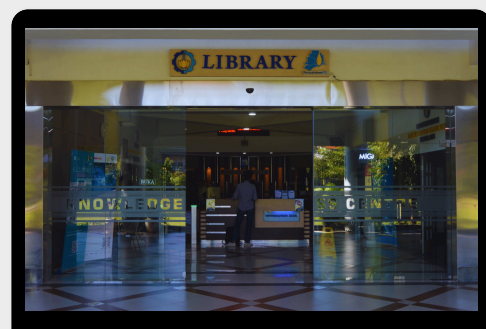
CommTECH Camp 2025: Stream 1 – Innovations in Engineering is an international academic program designed to introduce participants to recent advancements and applications in the field of engineering. The program combines lectures, workshops, and project-based activities that emphasize innovative approaches to solving real-world problems. It also serves as a platform for knowledge sharing and collaboration among students from different countries, fostering both academic enrichment and global networking. By integrating technical learning with cross-cultural perspectives, the camp provides a comprehensive environment for developing insights into engineering innovations and their broader impact.

DAY 1: ORIENTATION



01

The first day began with an orientation session that introduced participants to the objectives, schedule, and expectations of CommTECH Camp 2025. Ice-breaking activities were conducted to help students get to know one another, encouraging teamwork and building a friendly atmosphere among participants from diverse backgrounds.



02

In the afternoon, camp members joined a guided campus tour to explore the university's facilities. The tour included visits to several research project buildings, where we gained insights into ongoing innovations and the advanced resources available for academic and engineering development.

DAY2



Technology Innovation in ITS

The second day began with a lecture on technology innovation at ITS, where participants were introduced to the university's advancements in engineering and its applications in addressing global challenges. The session provided valuable insights into cutting-edge research and highlighted the role of innovation in shaping future solutions.

Student Talent Presentation and Cultural Activities



In the afternoon, participants attended student talent presentations, which showcased projects and organizations such as underwater robotics, military service initiatives, and the UN Leadership Club. The day concluded with traditional games and a fun dinner, creating a lively cultural exchange and fostering stronger connections among participants.

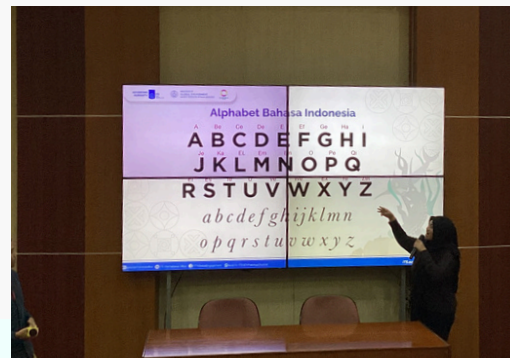


DAY 3 & 4



Fun Bahasa Session

The third day began with a “Fun Bahasa” session, where the attendees were introduced to the basics of the Indonesian language. The activity was engaging and interactive, allowing the group to learn useful expressions while also appreciating the cultural significance of the language.



Chemical Engineering

In the afternoon, the camp members attended a lecture on chemical engineering, which provided an overview of key concepts and recent developments in the field. The session emphasized the practical applications of chemical engineering and its importance in various industries, enriching the learners' technical knowledge.



Electrical and Electronic Engineering

The morning session focused on electrical and electronic engineering, followed by a tour of the related laboratories. This provided a practical overview of the facilities and research conducted in the field.



Instrumentation Engineering

In the afternoon, the schedule continued with a lecture on instrumentation engineering and a visit to its specialized labs. The session offered insights into the applications of instrumentation systems in engineering practice.

DAY 5

Lecture and Debate on Environmental Engineering

In the afternoon, the schedule continued with a lecture on instrumentation engineering and a visit to its specialized labs. The session offered insights into the applications of instrumentation systems in engineering practice.

Cultural Exploration of East Java and Bali

In the afternoon, the program shifted to cultural activities, introducing the traditions of East Java and Bali. The attendees learned about local history, practiced traditional songs and dances, and enjoyed a performance by the university's students. This cultural immersion created a memorable exchange and deepened the appreciation of Indonesia's rich heritage.



DAY 6: CITY TOUR

Kampung Genteng Candirejo – Sustainable Innovation

The tour began at Kampung Genteng Candirejo, a model of urban sustainability located in the heart of Surabaya. Known for its award-winning cleanliness and self-reliant ethos, the village features PANDORA—a community wastewater treatment system that safely cleans household wastewater and recycles it for use in hydroponic vegetable gardens and fish ponds, benefiting both residents and the ecosystem. The environment is notably lush, with hydroponic setups and greenhouses contributing to an atmosphere that feels at once innovative and peaceful. The kampung also supports communal learning through a small library where local children can read and play



Tugu Pahlawan (Heroes Monument)

Next, we visited the iconic Tugu Pahlawan, a monument dedicated to honoring the bravery and resilience of Surabaya's citizens. The site commemorates the city's pivotal role in the struggle for independence, offering a reflective and educational space to learn about Indonesia's fight for freedom.



Surabaya Kriya Galeri – Souvenir Finale

We concluded the day with a visit to the Surabaya Kriya Galeri, browsing and purchasing local handicrafts and souvenirs. It was the perfect way to round off a day steeped in sustainability, history, and culture.

De Javasche Bank – Bank Indonesia Museum

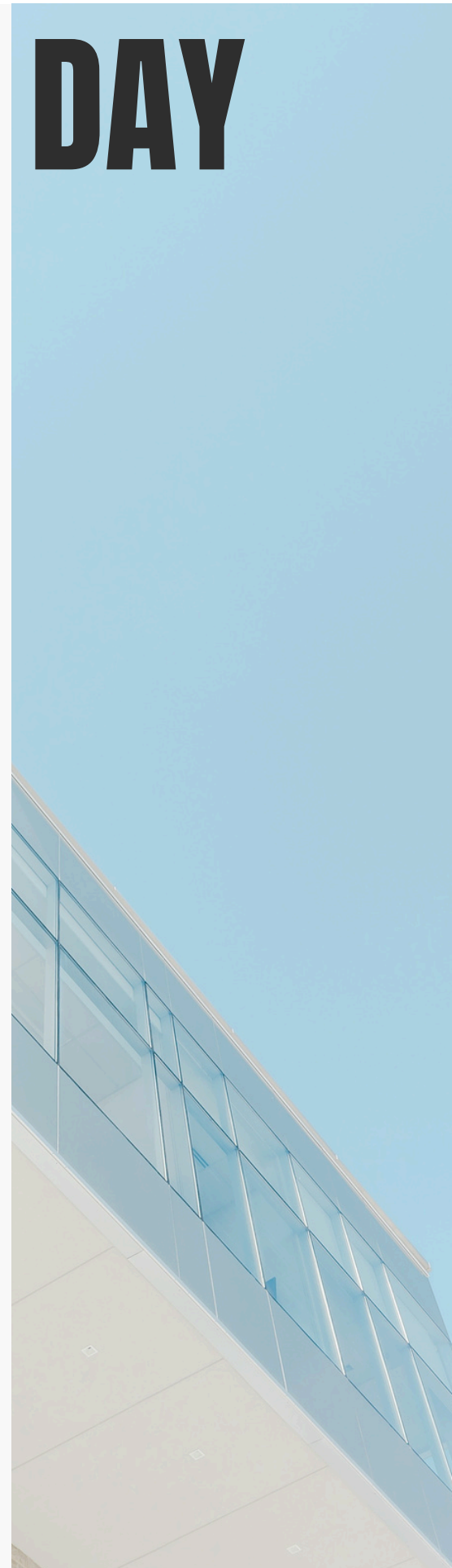
Our third stop was the historic De Javasche Bank, now repurposed as the Bank Indonesia Museum. Established originally in 1829 and reconstructed in 1904 with Neo-Renaissance architecture enriched with Javanese ornamentation, the building now serves as a cultural heritage site. The museum spans three floors and showcases the evolution of Indonesia's banking system, with exhibits including old currencies, antique banking equipment, and historical photographs of Surabaya



DAY 7: FREE DAY



Exploring around Surabaya



DAY 8

VISIT TO MANUFACTURING SYSTEMS LABORATORY

The morning session was spent at the Manufacturing Systems Laboratory, where we were introduced to the assembly lab and observed the use of advanced robotics. The demonstrations highlighted how automation is integrated into modern manufacturing processes, showcasing the efficiency and precision of robotic systems in industrial applications.



VISIT TO GEOPHYSICAL ENGINEERING LABORATORY

In the afternoon, the program continued with hands-on experiments in the Geophysical Engineering Department. We learned how to detect underground pipelines using specialized instruments and practiced measuring seismic waves to understand how geophysical methods are applied in engineering. These activities provided practical insights into the technology used for earth exploration and environmental monitoring.



DAY 9

VISIT TO HIGH SCHOOL IN SURABAYA

In the morning, we visited a high school in Surabaya that stood out for its emphasis on creativity and innovation. The students proudly showcased projects ranging from recyclable inventions to cultural performances, including traditional music, dance, and historical roleplays. It was inspiring to witness their enthusiasm, energy, and strong teacher-student relationships, which reflected a learning environment that encouraged both academic growth and personal talent development.



DAY 9

VISIT TO SURABAYA INTELLIGENT TRANSPORT SYSTEM

In the evening, we explored the Surabaya Intelligent Transport System, where we learned how traffic flow in the city is monitored and managed. The visit highlighted the use of advanced data systems in improving urban mobility and maintaining traffic efficiency. This session provided valuable insights into how technology can be applied to address complex challenges in city transportation.



DAY 10

The day started with the announcement of projects and group work assignments, setting the stage for collaborative tasks among the camp members. The remainder of the day was dedicated to preparing for the upcoming trip to Mount Bromo, ensuring readiness for both the academic and cultural aspects of the excursion.



MOUNT BROMO

The Mount Bromo trip was one of the most memorable highlights of the program. We departed from the guest house at 11 p.m. and, after a three-hour drive, transferred to jeeps that took us closer to the mountain. The journey included waiting for the sunrise from 3 a.m., during which we were able to admire a sky full of stars. Although the cold weather and uphill hiking were challenging, the breathtaking sunrise over Mount Bromo made the effort worthwhile. From a higher vantage point, the view became even more spectacular, offering a remarkable panorama of the volcanic landscape.

After descending, we had breakfast and prepared for the next stage of the adventure—riding horses across the volcanic desert to reach the crater. Climbing the 300 steps to the top was demanding, but the sight of the active volcano, with traces of sulfur smoke and minor eruptions, left a lasting impression. The experience combined natural beauty, cultural significance, and adventure, making it a truly unforgettable journey.



MOUNT BROMO



THE LAST DAY



100%

The final day of CommTECH Camp 2025 was dedicated to group presentations, where each team shared their chosen topics, ranging from automation and artificial intelligence to environmental issues. This session allowed participants to demonstrate their learning outcomes, exchange ideas, and reflect on the knowledge gained throughout the program. In the evening, a farewell dinner was held, during which certificates of participation were awarded. The dinner also provided a moment to review the experiences and memories created during the camp. Saying goodbye was not easy, yet it marked the end of an extraordinary journey—one that left a lasting impact both academically and personally.





CAMP CONCLUSION



CommTECH Camp 2025: Stream 1 – Innovations in Engineering was an enriching program that combined academic learning, cultural exchange, and personal growth. Through lectures, laboratory visits, and debates, I gained valuable insights into various fields of engineering and their real-world applications. The cultural sessions, city tours, and excursions such as the Mount Bromo trip further deepened my understanding of Indonesia's heritage and natural beauty while fostering meaningful connections with peers from diverse backgrounds. Overall, the camp was an unforgettable experience that broadened my academic perspective, strengthened my cross-cultural awareness, and inspired me to approach challenges with innovation and collaboration.

TERIMA KASIH



ITS, Surabaya, Indonesia



CommTECH Camp 2025: Innovations in Engineering



21st July – 1st August