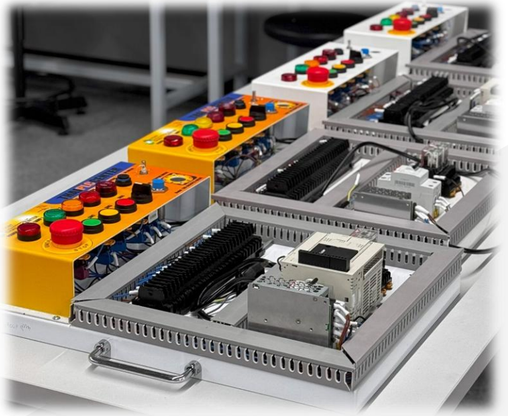
KOSEN
KMITL

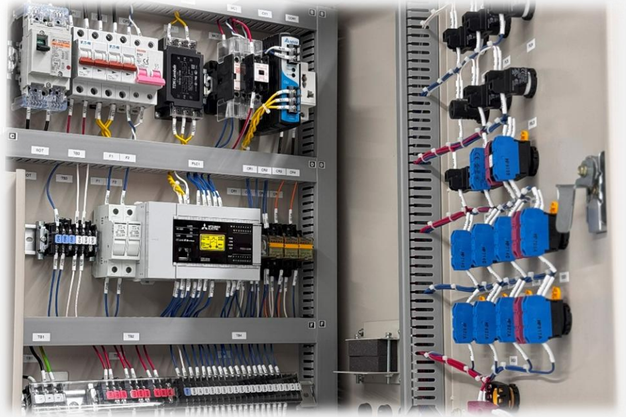
KMITL
พระจอมเกล้าลาดกระบัง

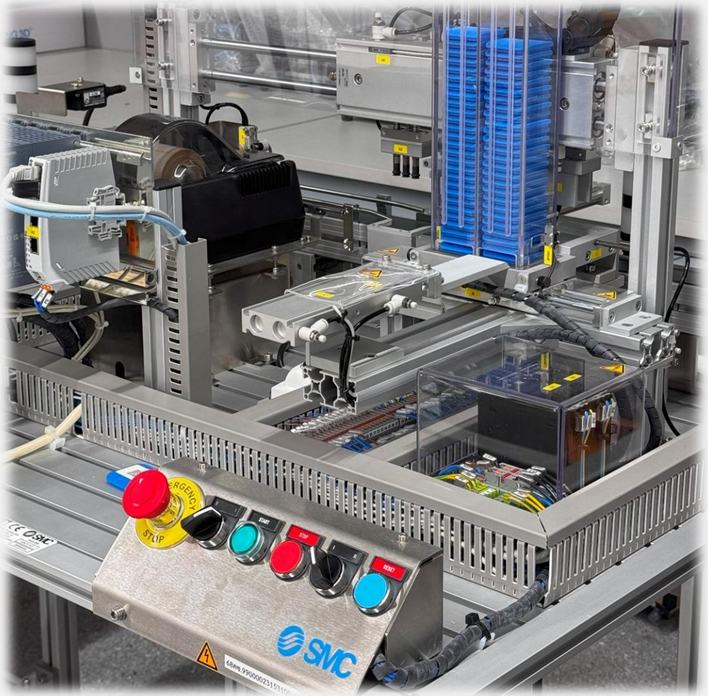
KOSEN – KMITL
EDUCATION

Table of Contents

- KOSEN in Thailand
- Curriculums
- Internship / FYP
- Employment policy







KOSEN in Thailand

KOSEN is NOT a Vocational School

Vocational School = KOSEN

AGE	University (Bachelor's Degree)		Thai KOSEN (タイ高専) (Associate Degree)		Vocational (Diploma Degree)
22	*Graduation Research*	*Engineering Design*	Year 5: *Graduation Research* / *Engineering Design*		Year 2: Higher-Vocational
21	*Internship*	*Manufacturing practices*	4: *Internship*		1: (職業高等専門学校) ประกาศนียบัตรวิชาชีพชั้นสูง
20	Major Engineering Subjects	*Experiments*	3: *Manufacturing practices*		3: Secondary-Vocational
19	*Fundamental Mathematics and Science General Education*		2: *Experiments*		2: (職業高校)
18		Matthayom 6	1: *Fundamental Mathematics and Science General Education*		1: ประกาศนียบัตรวิชาชีพ
17	Upper-Secondary (普通高校)	Matthayom 5			
16		Matthayom 4			
15		Matthayom 3			
14	Lower-Secondary (中学校)	Matthayom 2			
13		Matthayom 1			

Condensed into 5 years

Projects, Contests

KOSEN 国立高等専門学校機構
- Follows Japanese KOSEN Educational Standard
- Cooperative operation and education with KOSEN experts from Japan

Ref: http://www.thaigov.go.th/ebook/contents/detail/24#book/

Equivalent Leaning Subjects with University

KOSEN – KMITL: Mechatronics Eng.(Credits)

Age	15	16	17	18	19	
Year	1	2	3	4	5	Total Credit
一般科目 (General Education)	9	10	8	8	5	**40**
日本語 (Japanese Language)	5	5	3	3	3	**19**
基礎数理科学科目 (Fundamental Mathematics and Science)	11	9	8	4		**32**
専攻専門科目 (Major Engineering Subject)	11	12	17	24	25	**89**
専門選択科目 (Engineering Elective)					6	**6**
	36	36	36	42	36	**186**

KMITL: School of Eng., Mechatronics Eng. (Credits)

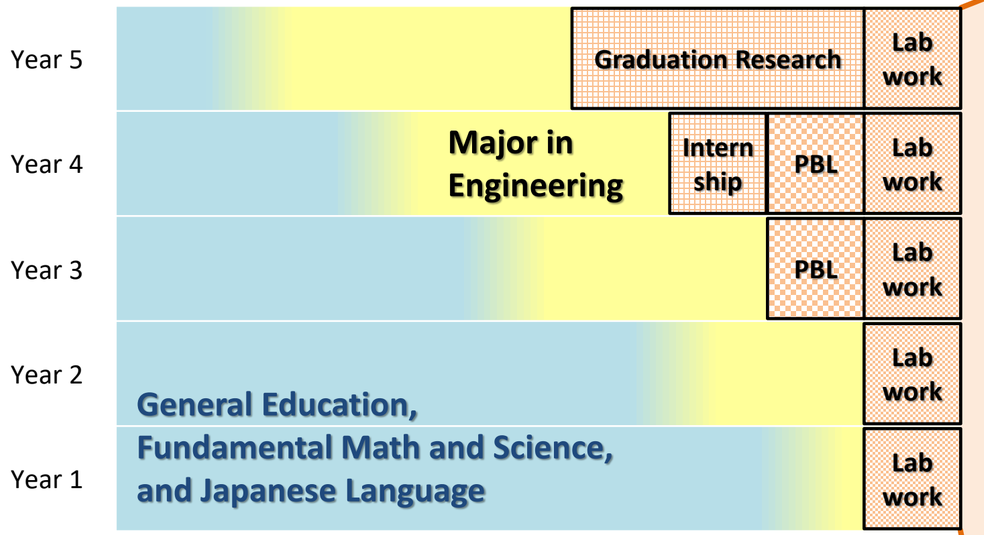
Age	18	19	20	21	
Year	1	2	3	4	合計単位
一般科目 (General Education)	10	7	7	6	**30**
基礎数理科学科目 (Fundamental Mathematics and Science)	18	3			**21**
専門専攻科目 (Major Engineering Subject)	13	31	34	9	**87**
専門選択科目 (Engineering Elective)				3	**3**
自由選択科目 (Free Elective)				6	**6**
	41	41	41	24	**147**

KNOWLEDGE and Practical Skills Equivalent to Japanese KOSEN

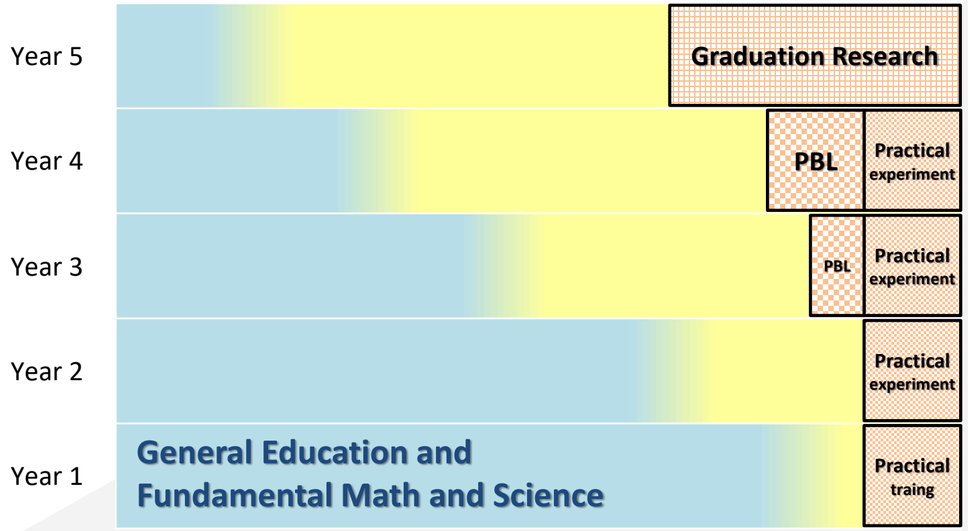
(The number of hours required for practical training exceeds that of Japanese KOSEN)

KOSEN KMITL — KMITL พระจอมเกล้าลาดกระบัง

Curriculum Structure and Time Allocation in KOSEN – KMITL



Curriculum Time Allocation in typical Japanese KOSEN



KOSEN – KMITL, Mechatronics Engineering

Developing the ability to design, propose, and develop robotic/mechatronic systems that solve specific problems using practical skills and knowledge of mechanical, electrical and control engineering

(A.Y. 2022 performance base)

Year	Sem.	Time	Internship / Graduation research
5	2nd	150 hours	Graduation research project
	1st	100 hours	
4	2nd	1 month	Internship in local industries

Year	Sem.	Time	Theme for PBL (Project Based Learning)
4	2nd	26 h 40 min.	Development of trackless AGV
	1st	25 h	Conceptual design of trackless AGV
3	2nd	25 h	Proposal for a new logistics system in the warehouse
	1st	26 h 40 min.	Identification of Thai social issues and proposal of solutions

Year	Sem.	Time	Theme for Lab Work	Achievement
5	2nd	50 h	Practice for Mechatronics: Engineering Design	Practice the design and construction of the entire mechatronics system through the project.
	1st	50 h		
4	2nd	53 h 20 min.	Embedded System Development	Integrate elemental parts for mechatronics and design necessary embedded systems.
	1st	53 h 20 min		
3	2nd	50 h	Advanced Robotics	Design and build robots through the selection of necessary actuators and sensors for robot.
	1st	53 h 20 min.		
2	2nd	42 h 30 min.	Practice for Robotics	Perform various measurement necessary for control using elements used in robots.
	1st	40 h		
1	2nd	40 h	Introduction to Robotics	Explain and perform the basic electric and mechanical measurements for mechatronics.
	1st	40 h		

- More than 550 hours of practical training is secured over five years. (A typical Japanese KOSEN is about 470 hours)
- PBL is promoted with the support of Japanese companies in Thailand (Theme, Engineer dispatch / Financial support)
- Students experience practical experiments and PBL during a one-month training at Japanese KOSEN
- Thai KOSEN coordinate internships and graduation research and collaborates with companies to train students

Associated Degree (5 years)

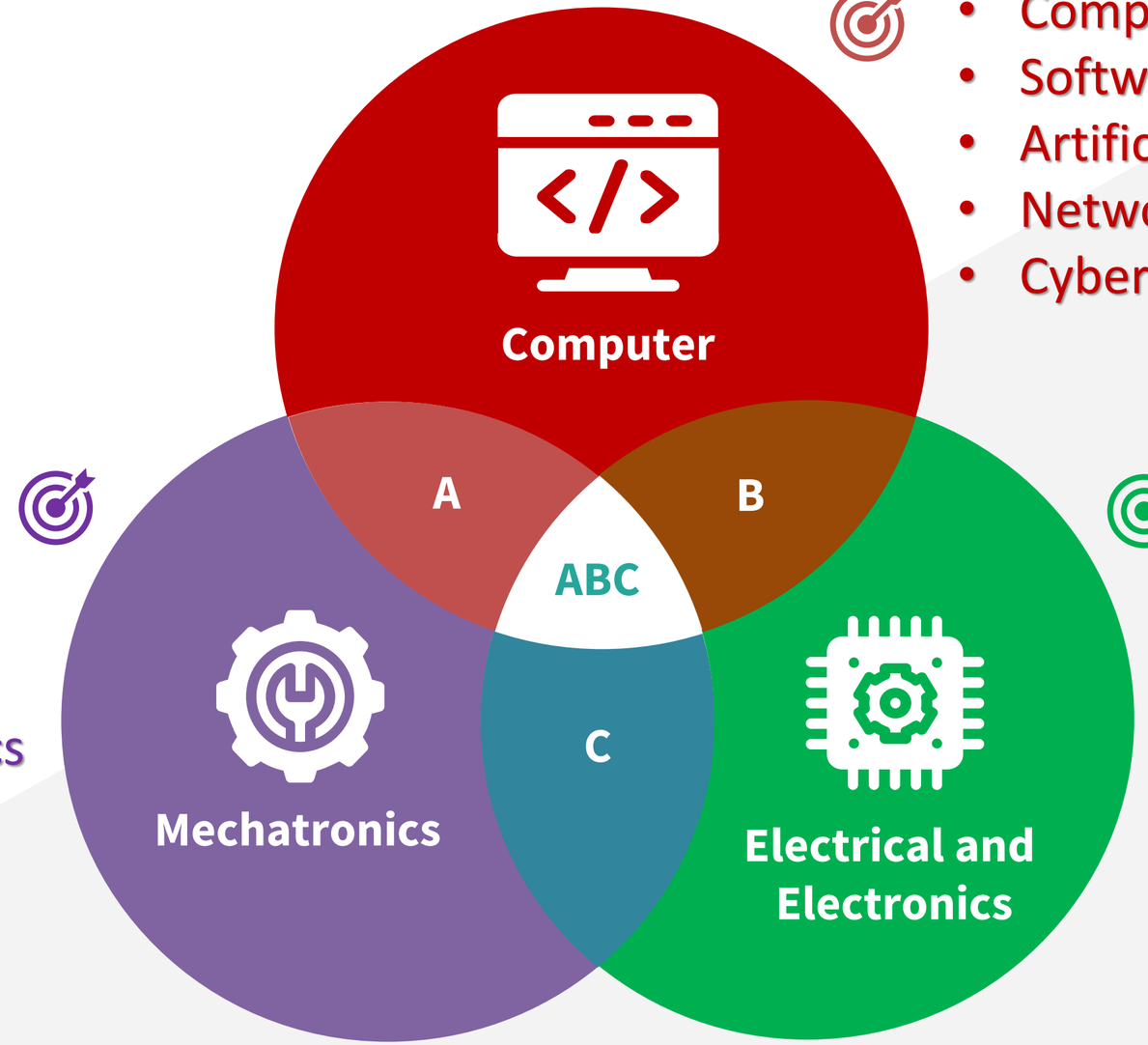
- Mechatronics Engineering (Start 2019)
- Computer Engineering (Start 2021)
- Electrical and Electronic Engineering (Start 2023)

Bachelor's Degree (Advanced Course) (2 years)

- Advanced Innovative Engineering (Start 2024)

KOSEN – KMITL : Three Programs

- Computer Design
- Software Programming
- Artificial Intelligence
- Network
- Cybersecurity



- Control Eng.
- Sensor & IoT
- Mechanical Eng.
- Electric &Electronics
- Programing

- Electrical & Electronics Eng.
- Green Energy
- Control Eng.
- Power Electronics
- Smart City

Curriculum : Bachelors of Engineering

The Bachelor of Engineering program at KOSEN - KMITL, offers an advanced innovation engineering track with a duration of 2 years. This program builds upon content from the associate degree level and provides two learning formats: Format 1 includes scholarship opportunities, and Format 2 allows students to study while working

Ref: www.kosen.kmitl.ac.th/en/curriculums/bachelor-of-engineering-in-advance-innovation-engineering-en

KOSEN International Standard (KIS)

公益社団法人 日本工学教育協会
Japanese Society for Engineering Education

For improving the quality of KOSEN education and ensuring the quality of education internationally, Japanese Society for Engineering Education (JSEE) has started a certification system to evaluate the educational content of KOSEN regular course education based on KIS. Ref https://www.jsee.or.jp/english/certificate/kis

JSEE

Certificate of Accreditation

No. 015

KOSEN-King Mongkut's Institute of Technology Ladkrabang (KMITL)

Mechatronics Engineering Department

This is to certify that the above mentioned KOSEN satisfies the KOSEN International Standard for Technical College Education (KIS) and is accredited by Japanese Society for Engineering Education (JSEE)
Period of Validity: from 1 April 2023 to 31 March 2026

14 March 2025

Dr. Nobuyuki IWATSUKI
President
Japanese Society for Engineering Education

Entrance Competitive Rate for AY2019 – AY2025

Academic Year	2019	2020	2021	2022	2023	2024	2025
Number of Applicants	306	968	2,508	3,512	5,658	5,612	7,051
KOSEN – KMITL Student	24	24	96	96	111	177	156
Competitive Ratio	1:13	1:40	1:26	1:37	1:51	1:32	1:45

Number of Students in academic year 2025

YEARS	Mechatronics			Computer			Electrical & Electronics			Total students
	KOSEN – KMITL	KOSEN Japan	Total	KOSEN – KMITL	KOSEN Japan	Total	KOSEN – KMITL	KOSEN Japan	Total	
1st year	52	-	52	54	-	54	50	-	50	**156**
2nd year	61	-	61	50	-	50	61	-	61	**172**
3rd year	25	6	31	36	8	44	23	8	31	**106**
4th year	41	7	48	37	9	46	-	-	-	**94**
5th year	40	7	47	42	5	47	-	-	-	**94**
Total	**622**									

Advance course year 1	Scholarship	5	Plan B	14	**19**
Advance course year 2	Scholarship	5	Plan B	11	**16**

Education Timeline and Career Path

KOSEN KMITL

5 Years Education (Associated Degree)

Year 1 → Year 2 → Year 3 → Year 4 → Year 5

- Year 1: Factory tour
- Year 3: 1 month training in Japan KOSEN
- Year 4: Internship in Thailand
- Year 5: Final Year Project (FYP)

Scholarship Year 3-5 in Japan KOSEN — KOSEN 国立高等専門学校機構

Employment at Target Industry in Thailand — INDUSTRY 4.0

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2 Years Education (Bachelor's Degree)

Year 1 | Year 2

- **Plan A (Scholarship): JLPT N2***
  - Year 1: Research Project in Thailand
  - Year 2: Research Project in Japan
  - Year 2: Research Project in Thailand
- **Plan B (Work and Study)**
  - Research Project in Thailand

KOSEN in Japan — KOSEN 国立高等専門学校機構

Thai – KOSEN “Jitsumu Kunren”

Co-operative REAL Engineering education program with industry to develop practical knowledge and skills of Thai-KOSEN students

4th Year Grade

1st Semester						2nd Semester					
May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr

Learn the basic knowledge and methods necessary to solve problems in class.

PBL (1-2) Project/Problem Based Learning

Intern-ship

PBL (3-4) Project/Problem Based Learning

Receive Issues / Topics that companies are really facing

Set appropriate difficulty levels and achievable stretch goals for KOSEN students

5th Year Grade

1st Semester						2nd Semester				
May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar

Graduation Project / Research

KOSEN teachers and engineers from companies work together to supervise the project, from problem analysis to solution proposal and final report and presentation.

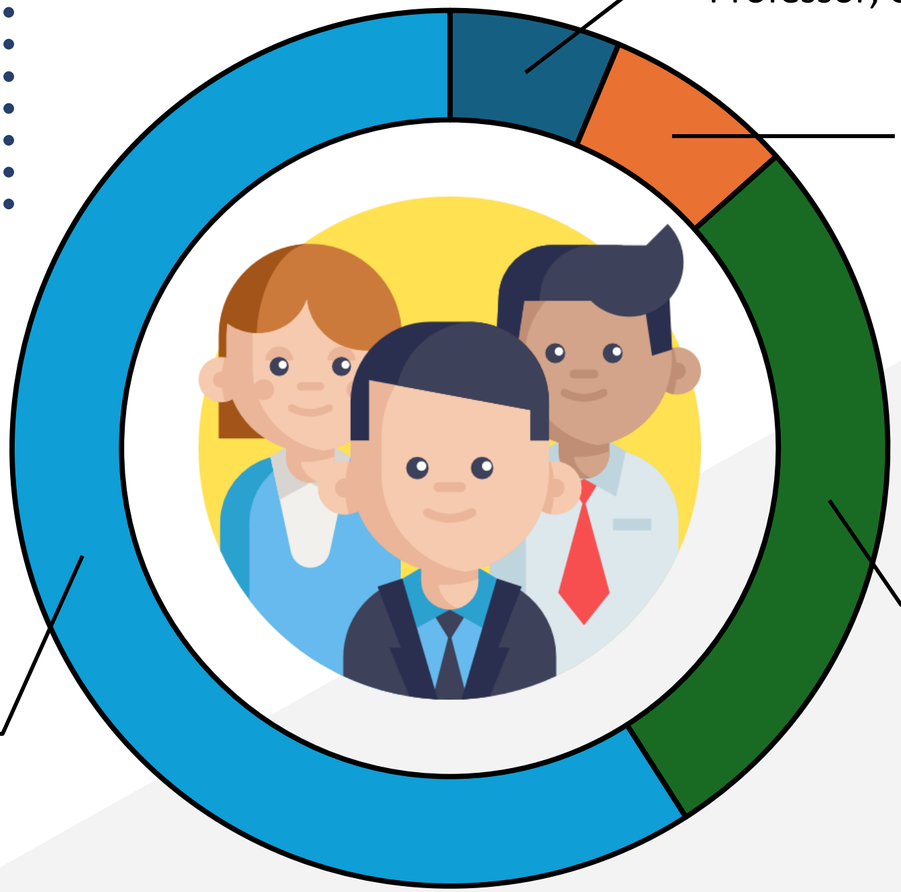
Employment Offering Expected

- Job Positions
  - Engineering, Development, Research, or Engineering/Technology based positions conventionallyy offered to new graduates with Bachelor’s degree
- Base Salary
  - Comparable to new graduates with a Bachelor’s degree
  - Suggested Model

KMITL School of Engineering		KOSEN – KMITL Graduates	
Bachelor’s Degree		Associate Degree (5 years Course)	
Regular Program	25,000 THB	-	
International Program	30,000 THB	25,000 THB	Higher education complying with Japanese KOSEN (KIS)
		30,000 THB	After language, competency, and other considerations/allowances add-on

- Career Paths in the Company
  - Open to career opportunities such as lead Engineer, research and development, and management.

Faculties Members



Enrollment and Graduation Ceremonies

7th Batch: Enrollment Ceremony

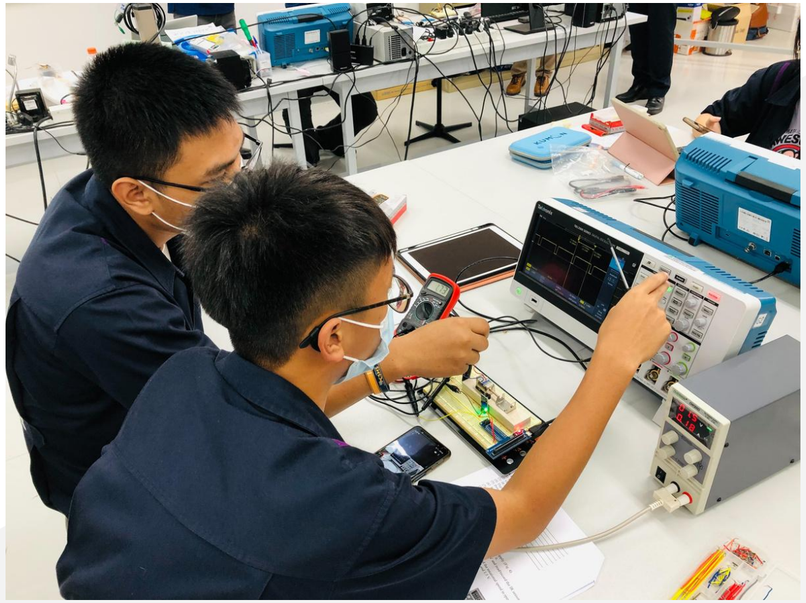
7th Batch: Enrollment Ceremony

KOSEN- KMITL: The Fifth Year Grade Student Farewell Ceremony 2025 *(Second Batch)*


KOSEN- KMITL: The Fifth Year Grade Student Farewell Ceremony 2

Unique Teaching Methods

Taught by Thai and Japanese Professors

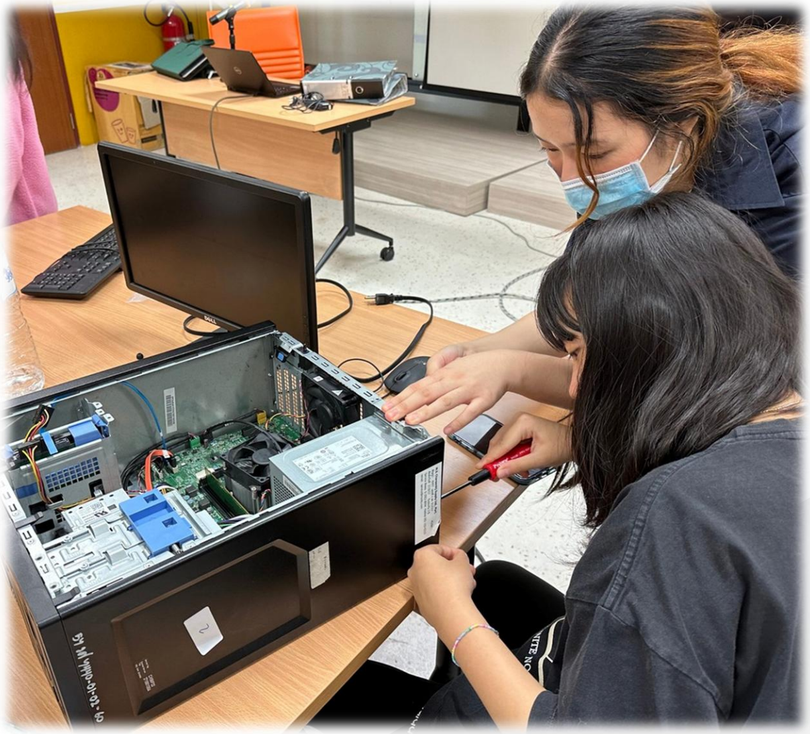


Teaching method that is equivalent to KOSEN Japan

Support from School of Engineering, KMITL

Reverse Engineering

Reverse engineering is one of our feature class to deepen students' understanding of the role and function of each part in real products.



Desktop Computer

Keyboard

IR Sensor

Labwork

Fundamental engineering hard and soft skills are introduced starting from the first year. Students are encouraged to develop a passion for engineering through hands-on activities, including assembling an analog multimeter, performing engineering measurements using digital oscilloscopes (standard research lab equipment), and working with heavy machinery such as lathes, drilling machines, laser cutters, and CNC machines.

Problem/Project Based Learning (PBL)

Cooperation with Japan

Cooperation with Japan

Cooperation with Japan

Mr.Hagiuda Koichi สมาชิกสภาล่างญี่ปุ่นและหัวหน้าคณะกรรมการวิจัยนโยบายของพรรคเสรีประชาธิปไตยญี่ปุ่น
พร้อมคณะจากประเทศญี่ปุ่น ได้เข้าเยี่ยมชม สถาบันโคเซ็นแห่งสถาบันเทคโนโลยีพระจอมเกล้าเจ้าคุณทหารลาดกระบัง

Cooperation with Japan

The pioneer of Thai KOSEN Project

ขอแสดงความยินดีกับ รศ.ดร.คมสัน มาลีสี ได้รับประกาศเกียรติคุณของรัฐมนตรีว่าการกระทรวงการต่างประเทศญี่ปุ่นประจำปี พ.ศ. 2567

Mr. NAKANISHI Yusuke (House of Councilors) visit

สมาชิกสภาผู้แทนราษฎร ประเทศญี่ปุ่น เข้าเยี่ยมชม KOSEN - KMITL

Cooperation with Japan

8 Presidents of KOSEN Japan visited KOSEN-KMTIL

Cooperation with Thailand

Minister of Higher Education, Science, Research and Innovation (MHESI) visited KOSEN-KMITL

Cooperation with companies: Events

Industrial Forum 2024

Cooperation with companies: Events

Industrial Forum 2025

Cooperation with companies: Factory Tour

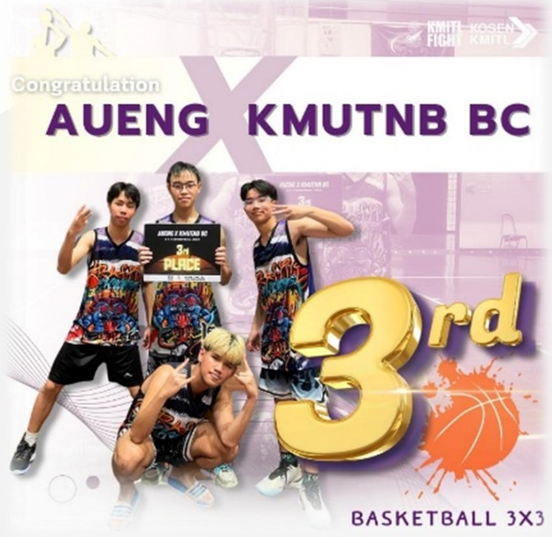
Cooperation with companies: Special lecture

Lecture from Company Person โดย Mr. Tsutomu KURIHARA: Daikin Industries (Thailand) LTD.

Lecture from Company Person โดย Mr. Tsutomu KURIHARA: Daikin Industries (Thailand) LTD.

Lecture from Company Person โดย Mr. Tsutomu KURIHARA: Daikin Industries (Thailand) LTD.

Encouraging to participate in competitions



1-Month Exchange Program in Japan KOSEN

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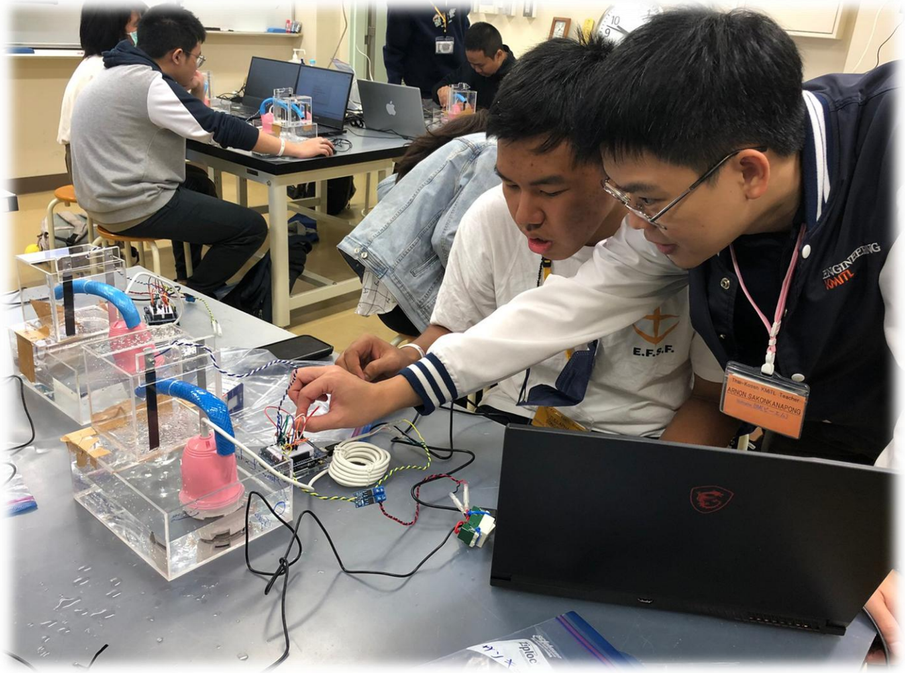
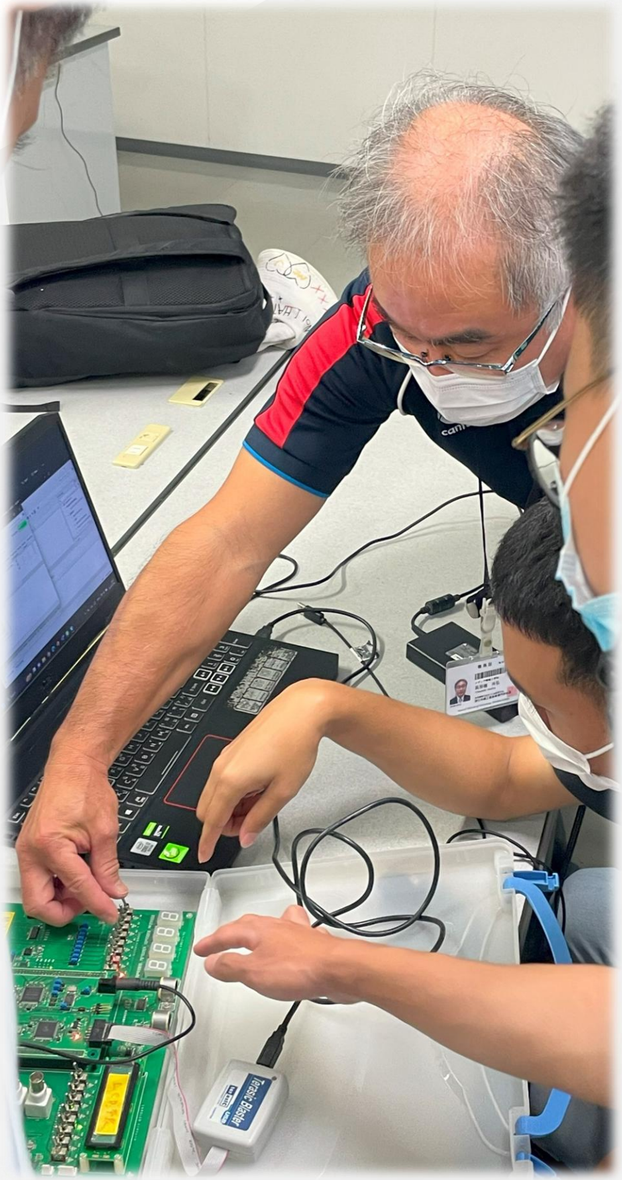




1st Batch student's career

Employment: 15 students (63%)

- Denso
- DMG Mori
- Hitachi Astemo Brake System
- Honda R&D
- Japan Air Line
- Komatsu
- Login Meta Comp Learning
- Ricoh
- RUNEXY
- Siam Kubota
- Siam Smart Solutions

Further Education: 9 students (37%)

- KOSEN – KMITL Advanced course 5 students
- Nagaoka University of Technology and Science 3 students
- Toyohashi University of Technology and Science 1 student

国立大学法人
長岡技術科学大学
Nagaoka University of Technology

TOYOHASHI
UNIVERSITY OF TECHNOLOGY

Graduation party @ the Embassy of Japan in Thailand

2nd Batch student's career

Employment: 14 students (58%)

- DMG MORI (THAILAND) CO., LTD.
- Honda R&D Southeast Asia Co., Ltd.
- Japan Airline Co., Ltd.
- Kawasaki Motors Enterprise (Thailand) Co., Ltd.
- NAKAGAWA SANGYO (THAILAND) CO., LTD.
- OSDesign (Thailand) Co.,Ltd.
- Skytech Equipment & Service Co.,Ltd.
- Sony Technology (Thailand) Co., Ltd.
- Takatsu MFG (Thailand) Co., Ltd.
- Thai Kokusai Co., Ltd.

Further Education: 10 students (42%)

- KOSEN – KMITL Advanced course 5 students
- Nagaoka University of Technology and Science 2 students
- Toyohashi University of Technology and Science 3 students

KOSEN- KMITL: The Fifth Year Grade Student Farewell Ceremony 2025 *(Second Batch)*

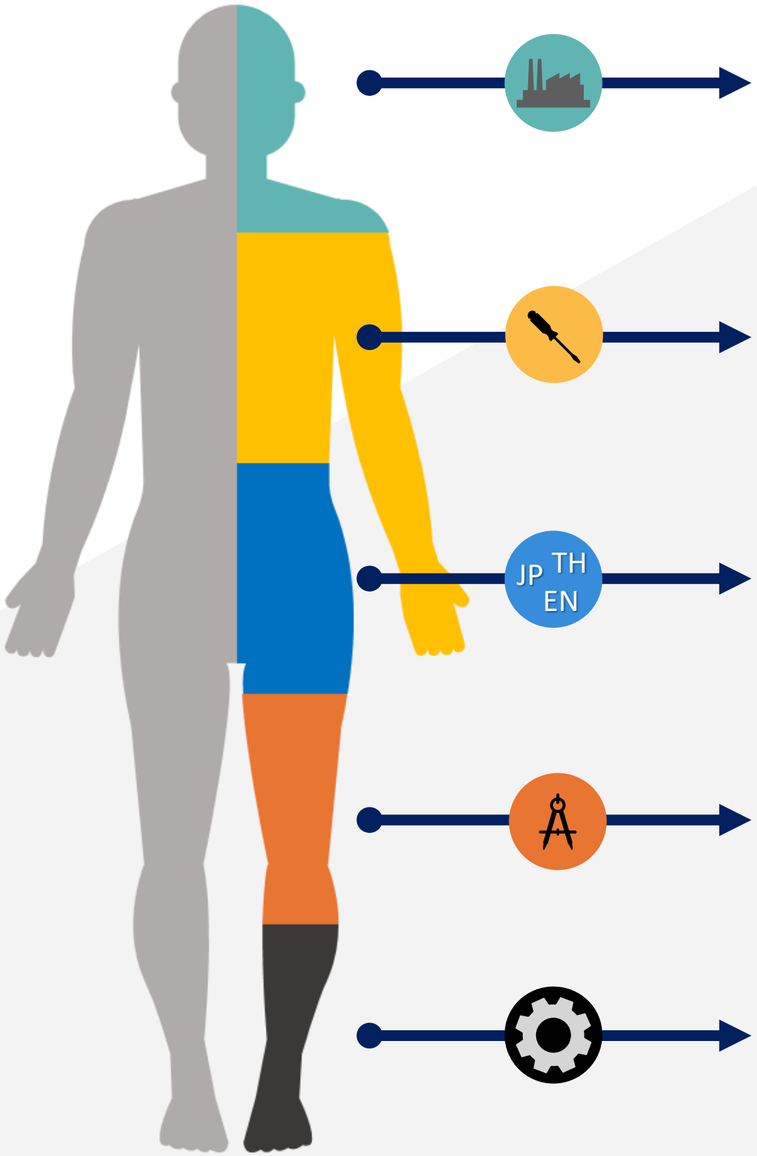
国立大学法人 長岡技術科学大学 Nagaoka University of Technology

TOYOHASHI UNIVERSITY OF TECHNOLOGY

The Character of KOSEN – KMITL

The new generation of engineering

The New Breed of Engineer | Thai KOSEN Fair 2023



Industry collaboration
Plant tour, PBL, Internship, Graduation project, Industrial forum

Practical skill
10 Lab-work, 1-month Exchange program in Japan KOSEN

3-Language
learning with three language systems: Japanese, English, and Thai

Major subjects
High number of engineering subjects.

Problem/Project Based Learning (PBL)
An educational approach that involves students actively engaging in real-world and meaningful projects.

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THANK YOU

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www.kosen.kmitl.ac.th/