

TRƯỜNG ĐẠI HỌC BÁCH KHOA HÀ NỘI  
**HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**VIỆN CƠ KHÍ ĐỘNG LỰC**  
SCHOOL OF TRANSPORTATION ENGINEERING



Welcome to AUN/QA Delegate

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Website: [ste.hust.edu.vn](http://ste.hust.edu.vn)

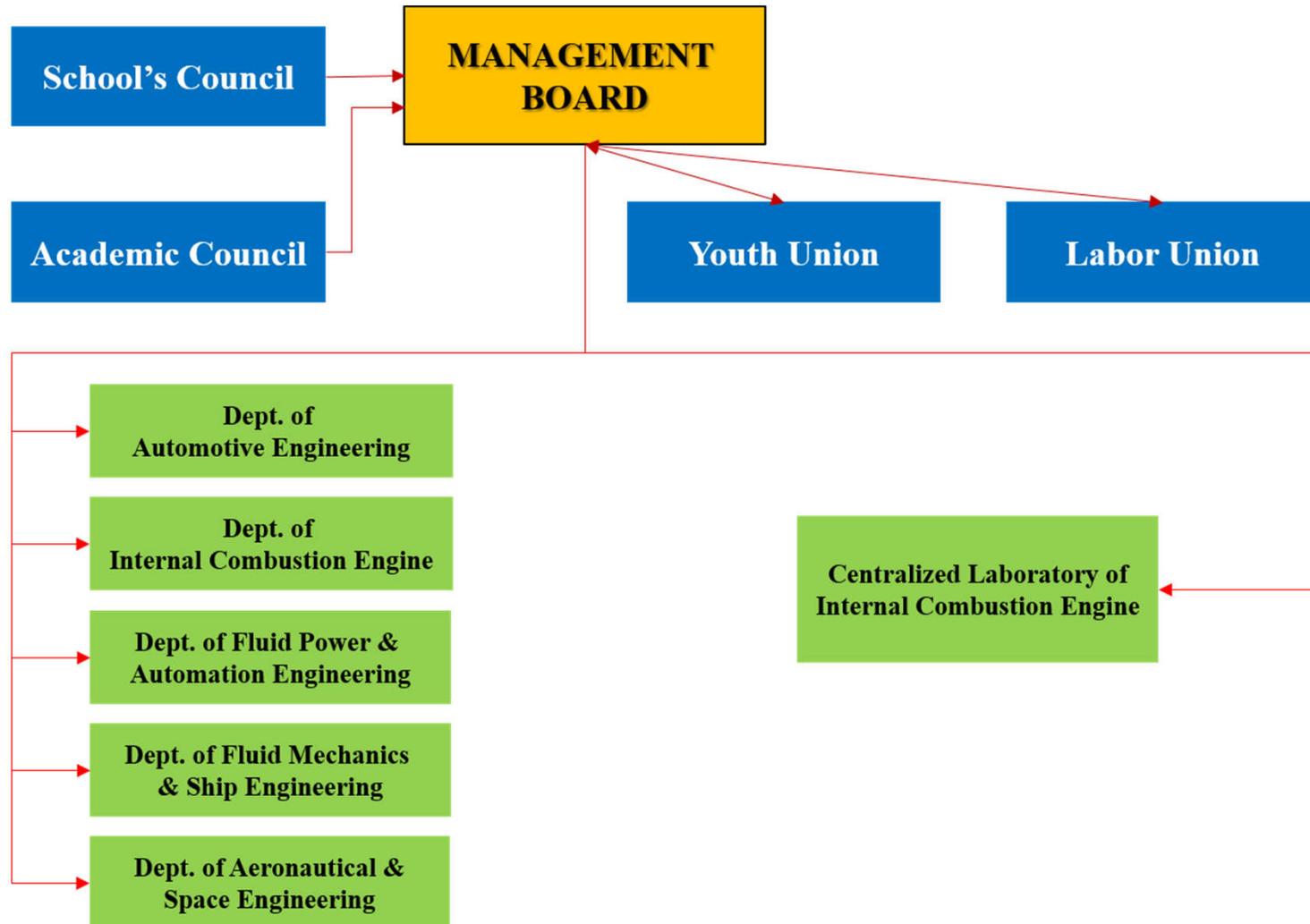
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# Introduction

- ❑ STE, known as Faculty of Transportation Engineering founded in 1966, was established in 2006, separated from the Faculty of Mechanical Engineering
  
- ❑ 71 faculties and staff :
  - *61 faculties, 7 technicians, 3 staff*
  - *3 full professors, 20 assoc. professors, 27 PhD., 20 masters, 1 bachelor*
  
- ❑ 5 departments, 1 centralized laboratory
  
- ❑ 4000 m<sup>2</sup>: offices, workshops & laboratories (2960 m<sup>2</sup>) and others

# Introduction



# Introduction

## **Mission (STE, HUST):**

Human development, high-quality workforce training, scientific research, technological innovation and knowledge transfer in the field of mechanical - transportation engineering, that serves our country and global society

## **Vision (STE, HUST):**

Become a leading institution in Southeast Asia for education, research and innovation in mechanical - transportation engineering; Pioneer in research activities of Hanoi university of science and technology

# Education

## Undergraduate

- 1900 students
- ~ 400 new students enrolled annually

## Graduate

- 80 master students
- 50 PhD. students

Bachelor/Engineer		Master		PhD.	
Major/Curriculum	Module	Major/Curriculum	Module	Major/Curriculum	Module
1. Aviation Engineering		1. Aviation Engineering	<i>Aviation Engineering</i>	1. Aviation Engineering	<i>Aviation Engineering</i>
2. Naval Architecture		2. Naval Architecture	<i>Naval Architecture</i>	2. Naval Architecture	<i>Naval Architecture</i>
3. Transport mechanical engineering	<i>Hydraulic machine and automation</i>	3. Transport mechanical engineering	<i>Hydraulic machine and automation</i>	3. Transport mechanical engineering	<i>Hydraulic machine and automation</i>
	<i>Automotive engineering</i>		<i>Automotive engineering</i>		<i>Automotive engineering</i>
	<i>Internal combustion engine</i>		<i>Internal combustion engine</i>		<i>Internal combustion engine</i>
4. Advanced Automotive Engineering (new curriculum started in 2018)	<i>Engineering and technology Management</i>				

# Education

## Process of developing a curriculum

- ✓ *HUST approves the committee for a curriculum development*
- ✓ *The committee bases on the required knowledge blocks, mission, vision and educational philosophy, to propose a structure and outcomes of the designed curriculum*
- ✓ *The structure and outcomes of the curriculum are sent to relating bodies for reviewing and suggestion*
- ✓ *A seminar on structure and outcomes of the curriculum is organized with the participation of faculties, students, alumni, employer, experts, to obtain ideas from different bodies*
- ✓ *Approval of the structure and outcomes by school's academic council and university's leader*
- ✓ *Syllabus development.*

## History of the TME curriculum development

- *2007: Changed from annual based to credit based, CDIO*
- *2009, 2011: First and second amendment*
- *2014: Third amendment*
- *2017: Big amendment based on the autonomy of HUST*

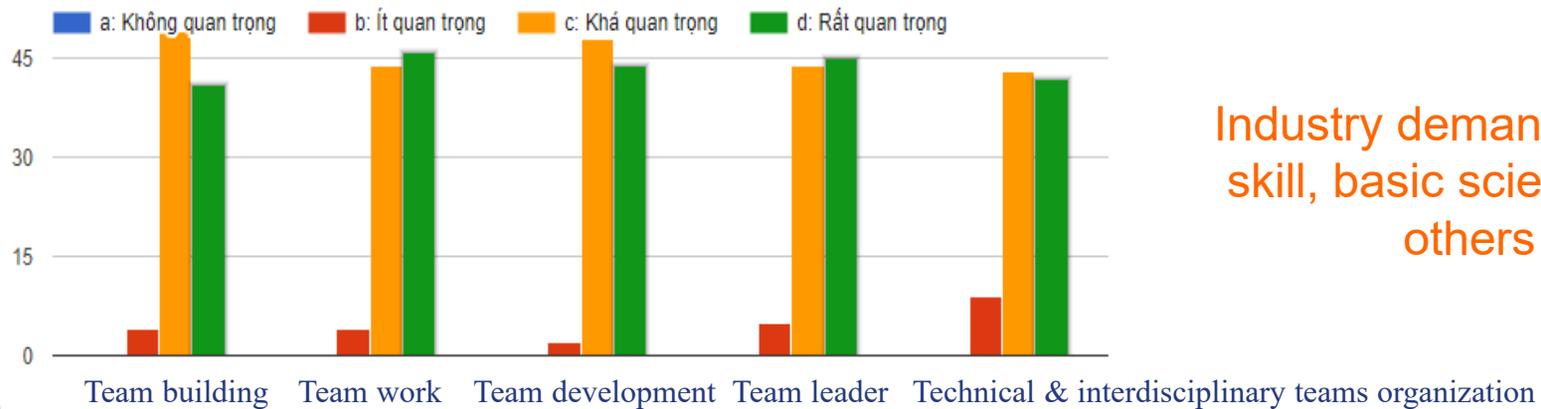
# Education



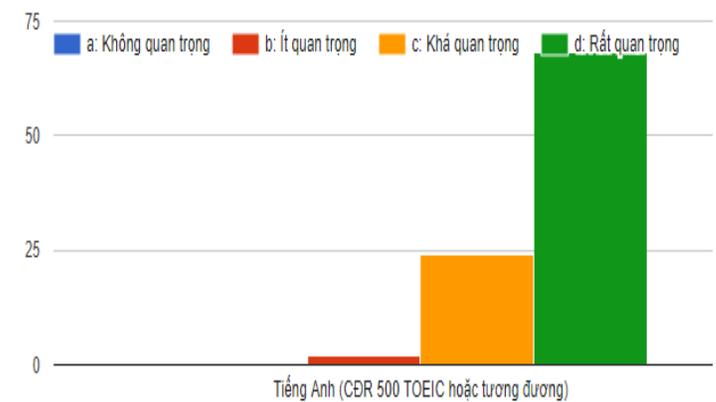
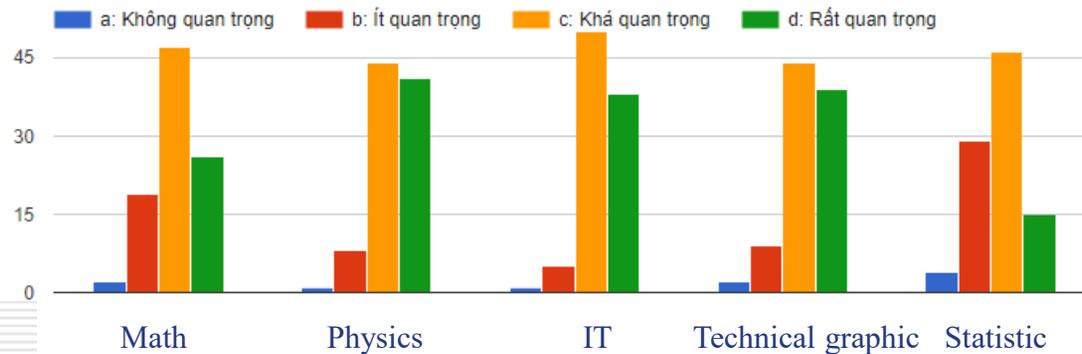
Seminar on curriculum's  
structure and outcomes in  
2017



# Education

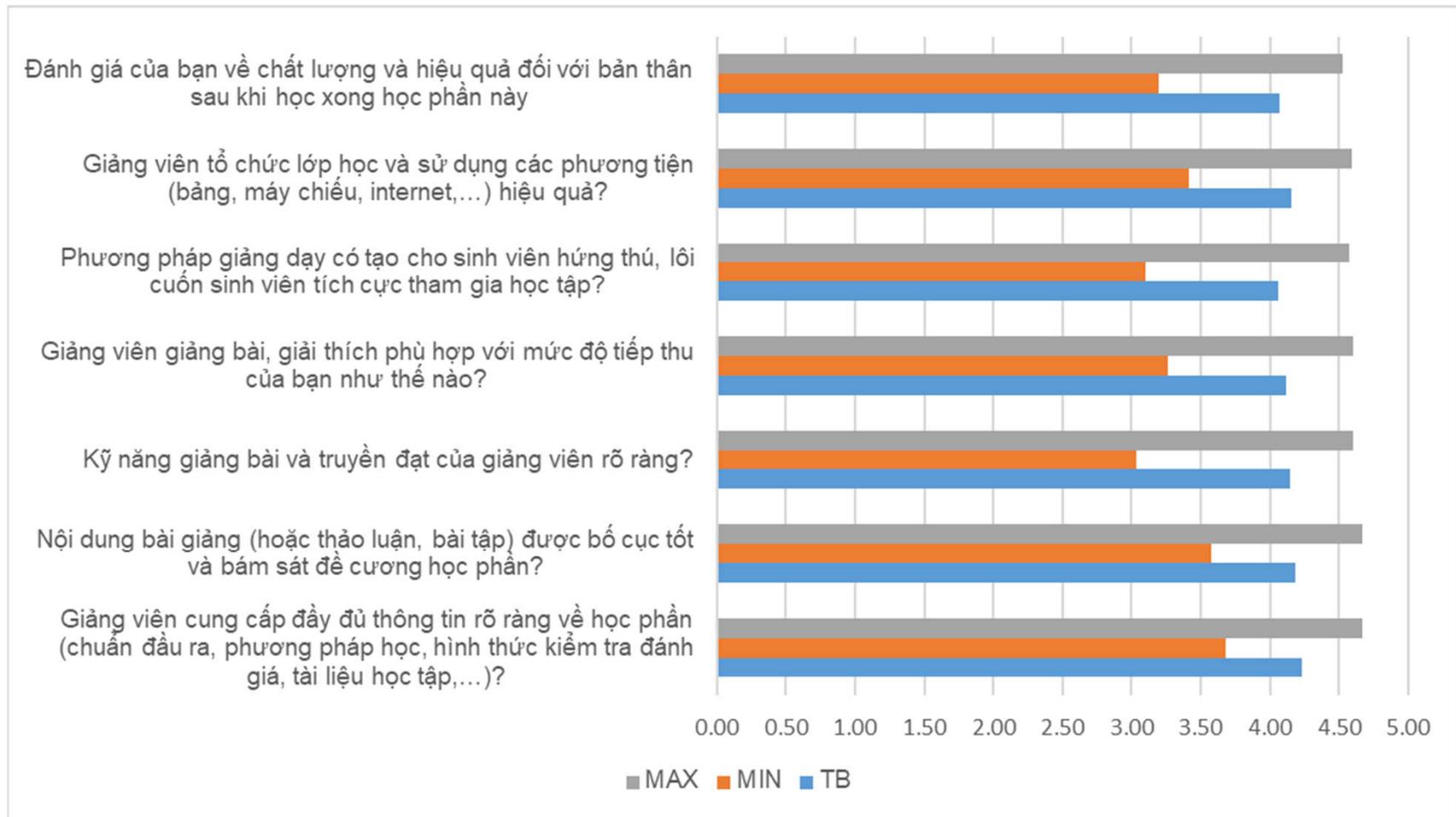


Industry demand on soft skill, basic science and others

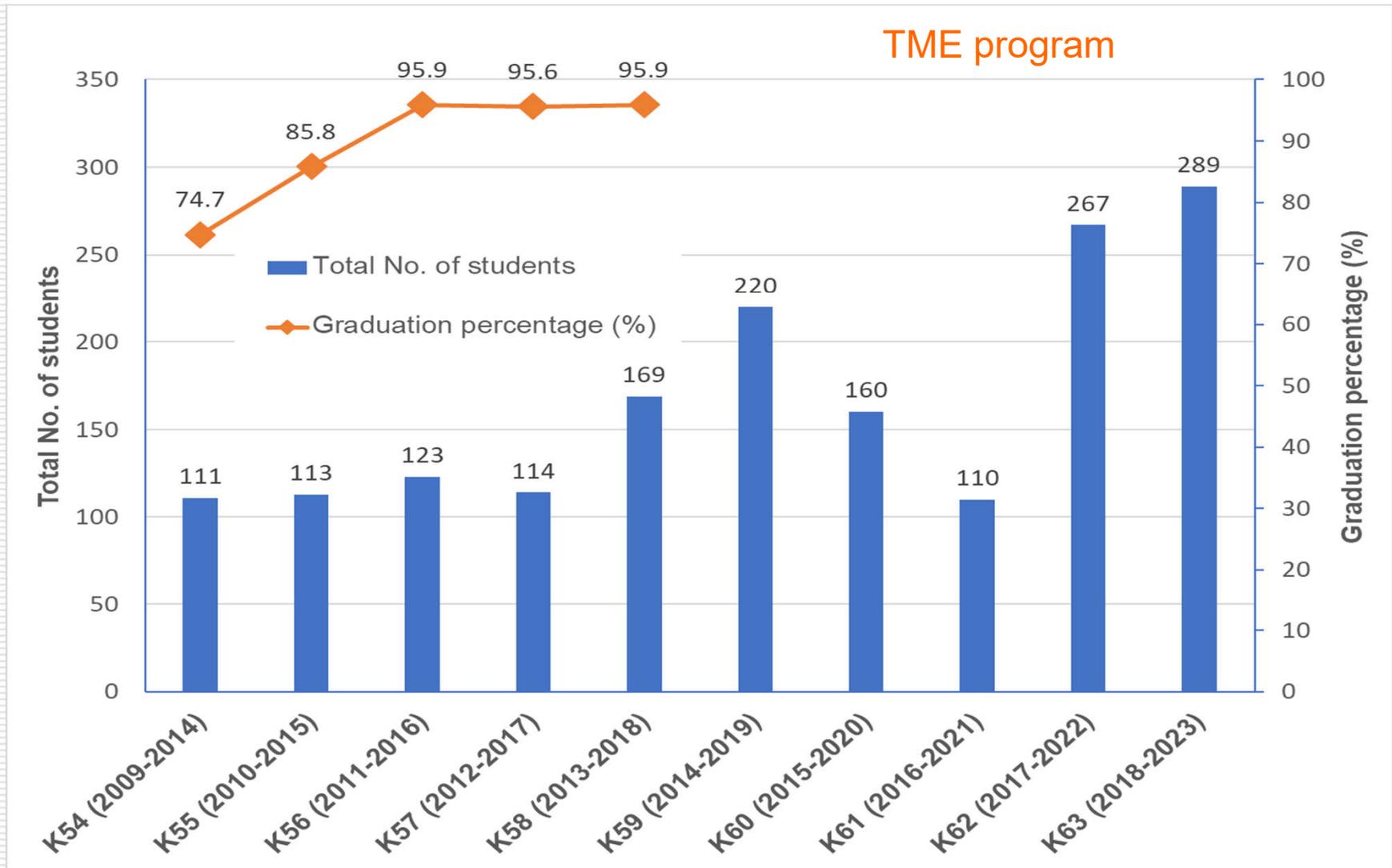


# Education

## Evaluation of students on teaching and teachers

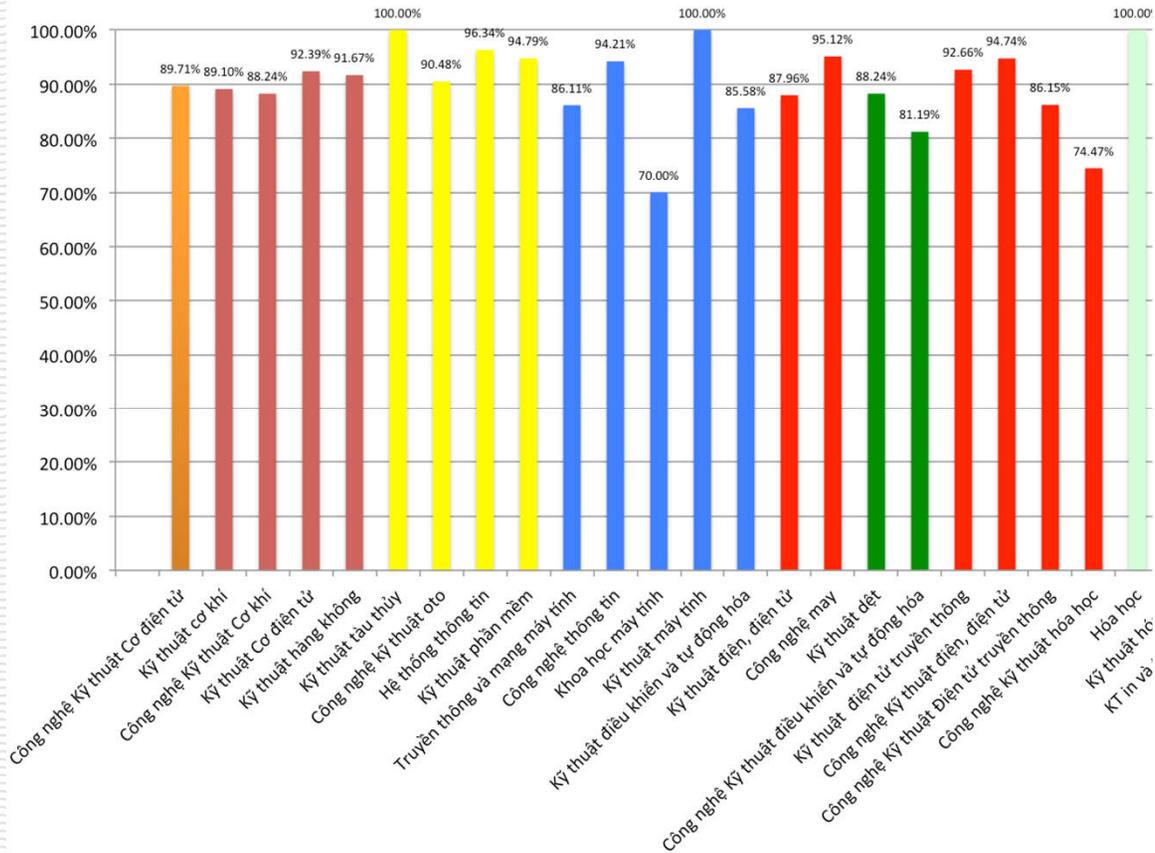


# Education



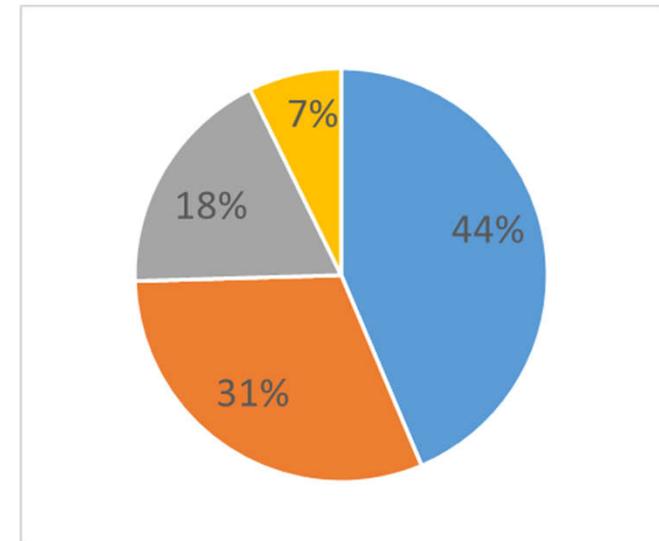
# Education

Ratio of alumni found jobs after **12 month** graduation (2017):  
**90%** from TME program



Ratio of jobs aligned with major  
(2017)

Làm đúng chuyên ngành	<b>24</b>	44%
Làm đúng ngành rộng	<b>17</b>	31%
Làm gần ngành rộng	<b>10</b>	18%
Làm trái ngành	<b>4</b>	7%



Ratio of alumni found jobs after **6 month** graduation (2018):  
**86%** from TME program

# Facility

7 offices, 11 workshops, a centralized laboratory and many educating Lab.



*Hydraulic automation testing and training system*

# Facility



*Wind tunnel  $M=0.1$*

# Facility



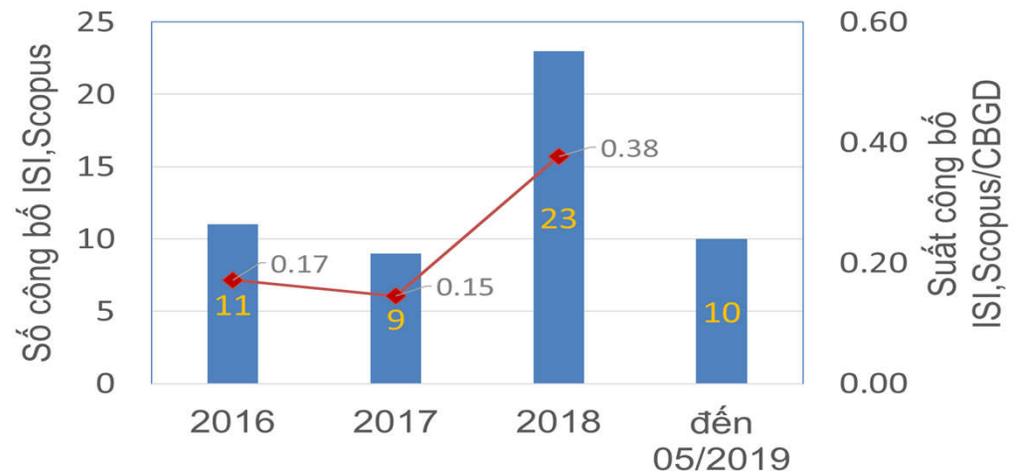
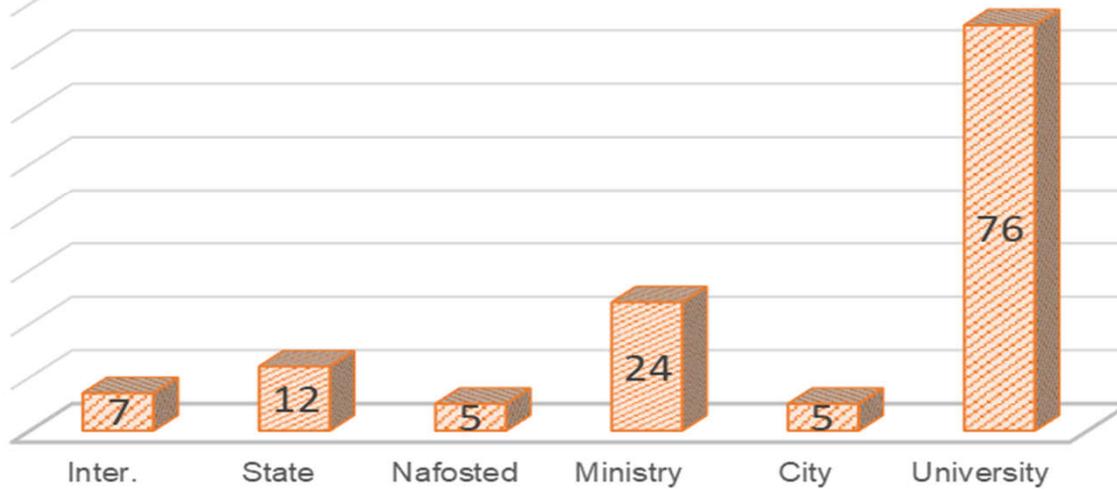
Test equipments at centralized laboratory of Internal Combustion Engines

# Research Activities

- Dynamics of parts and systems, dynamic shock and aerodynamics of vehicles,
- Electronic systems and automatic control systems on automobiles; electric and hybrid vehicles,
- **Alternative energy such as wind energy, small scale hydroelectric power, solar energy, ocean energy,**
- Propulsion system for mini submersible,
- Erosion flow, stability calculation for ships and flying objects,
- **AUV, MDA & RealTime UML, MAV,**
- ICE engine research: combustion, exhaust emissions, alternative fuels and fuel additives, emission model, alternative power train

# Research Activities

STE, HUST: RESEARCH PROJECTS (2006 - 05/2019)



# U-I Linkage

- ❖ **Japan & Korea:** Mitsubishi Heavy Industry - (MHI), ASEAN University Network/Southeast Asia Engineering Education Development Network (AUN/SEED-Net), Toyohashi Univ. of Technology - (TUT), Nagoya Univ., Tokyo Tech, Daihatsu, Work staff, Ulsan Univ.
- ❖ **Europe:** Safran, Ecole Nationale Superieure De Mecanique Et D'aerotechnique - (ENSMA), Motul Lubricant Corporation – France ; AVL – Austria; Emitec Company, Magdeburg University – Germany; Admiral Makarov State University for Maritime and Inland Shipping - Russia
- ❖ **USA:** EMBARQ WRI
- ❖ **ASEAN:** Chulalongkorn University, Kingmonkut Institute of Technology Ladkrabang, Thailand; Institut Teknologi Bandung - (ITB) - Indonesia ; Nanyang Technical University (NTU) - Singapore

# U-I Linkage

- ❖ PVN, EVN, Vinacumins, Viettel, VEAM,
- ❖ Automobile garages, hydraulic machine co. Ltd.
- ❖ Honda, Toyota, Nissan, Ford, Vinfast, Hyundai Thanh Cong, Thaco, Denso, Santomas, HTMP, ITM, JV System
- ❖ Universities, Institutes

# U-I Linkage



# Student activities



# Student activities



Shell Eco Marathon Asia 2012 (Malaysia)



Second  
pize  
Bio-Energy  
455,4  
km/litre



Honda Eco Mileage Challenge 2015

BK-Auto  
991 km/litre



# Student activities



# Student activities



International environment

Students internship

AOTULE Tokyo Tech  
Summer Program





# Student activities



## Scholarship:

Honda,  
Toyota,  
Denso, Motul,  
MHI,  
Daizotech,  
Alumni...

## Internship:

US, JP, EU,  
ASEAN



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# Thank You !