



International evaluation and accreditation

# EVALUATION AND ACCREDITATION DOCUMENTS

HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY

HANOI

VIETNAM

**April 2024**

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High Council for evaluation of research and higher education

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International evaluation and accreditation

## EVALUATION REPORT

HANOI UNIVERSITY OF SCIENCE AND  
TECHNOLOGY

Hanoi

VIETNAM

**FEBRUARY 2024**



The Hanoi University of Science and Technology (HUST) has mandated the Hcéres to perform its external evaluation. The evaluation is based on the “External Evaluation Standards” of foreign Higher Education institutions, adopted by the Hcéres Board on January 31<sup>st</sup>, 2022. These standards are available on the Hcéres website ([hceres.fr](http://hceres.fr)).

In the name of the expert committee<sup>1</sup> :

Philippe Lebaron, President of the committee

In the name of Hcéres<sup>1</sup> :

Stéphane Le Boulter, Acting President

The Higher Council for Evaluation of Research and Higher Education (Hcéres) is an independent public authority. It is responsible for evaluating higher education and research institutions, research organisations, research units, and training programmes.

<sup>1</sup> In accordance with articles R. 114-15 and R. 114-10 of the Research Code, evaluation reports are signed by the chairman of the expert committee and countersigned by the President of Hcéres.

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# I. PRESENTATION OF THE INSTITUTION

## INSTITUTION IDENTITY SHEET

- University/institution: Hanoi University of Science and Technology (HUST)
- Year of creation : 1956
- Legal status : Public university
- Internal organisational structure: 3 faculties with 10 affiliated schools, 6 research institutes and research centers, 12 administration units and 7 service units, and 1 company (BK-holdings)
- Location of the institution: No. 1 Dai Co Viet street, Bach Khoa ward, Hai Ba Trung District, Hanoi city.
- Number of students in 2022: 37 709 (20,7 % female students)
- Distribution of students in 2022: 36 244 students enrolled in the 1st cycle, 1305 in master, 160 in PhD
- Programmes: 67 bachelor/engineering programmes, 41 master programmes, 27 PhD programmes

Founded in 1956, the Hanoi University of Science and Technology (HUST) is the first multi-disciplinary technical university of Vietnam and is one of the key actors in supplying high quality human resources in the modernization and industrialization process of the country. For reference, Vietnam had a 8.02% economic growth in 2022. HUST has grown significantly during the last decade. It is ranked in the top 1000 best universities in the world according to the Times Higher Education (THE) international rankings, and 248<sup>th</sup> in Asia (QS) in 2022.

Governed by Vietnamese laws, this public institution was under the supervision of the Ministry of Education and Training (MEF). By decision N°.1211/QD-BGDDT on March 28, 2011, it was assigned as a pilot institution to develop the autonomy and a self-responsibility working scheme for some contents of training activities, organisational structure, staffing and finance. In October 2016, and by decision N°. 1924/QD-TTg, the pilot project was approved by the prime minister to renovate the operating mechanism of HUST. The year 2022 was marked by a remarkably historic transition of HUST after the approval of the institution's model-transformation by the government. It opened a new period of challenges for the development of HUST with the objective of becoming an international multi-disciplinary research university.

HUST has restructured its governance model since the last accreditation in 2017 with an important reduction of the number of units in 2022. Currently there are 40 units including 3 faculties with 10 affiliated schools, 6 research institutes and centres, 12 administration units and 8 service units, and 1 company (BK-holdings). HUST has decided to prioritize 4 Global Challenges Research Areas which are (i) Advanced materials, (ii) Data Technology and intelligent systems, (iii) Sustainable Energy and the Environment and, (iv) Health Sciences and Technology. Today, HUST covers most industrial sectors (mechanical engineering, transport, mechatronics, textiles, information technology, IT, chemistry).

HUST has a three-cycle higher education system consisting of Bachelor's, Master's and doctoral studies as it is applied in many European countries. The length of the studies, which used to be spread over 6 years, has since evolved, with a Bachelor's cycle that now lasts 4 years and a 1.5-year Master's cycle. Each faculty offers 2 to 5 specialties for a total of 70 bachelor's degree specialties. 39 international programmes were accredited in 2022. In total there are 27 PhD programmes, 41 Master programmes and 67 Bachelor/engineering programs

The institution is located in Hanoi with an area of 25.6 hectares to accommodate 37,709 students (1,465 Master and PhD students) and 1,701 staff including 1,078 lecturers (75% of whom have a PhD), 10 researchers, 458 administrative agents and 155 technical agents. . The number of students has increased by 20% since 2017 however, in the meantime, the number of PhD candidates has significantly decreased by 70%, from 527 in 2017 to 160 in 2022.

HUST's budget is approximately \$730 million, 53% of which comes from student fees, 25% from the state and last 22% from companies' activities, business services and other sources. HUST's total revenue has boomed since 2017 with an increase of 150%. HUST is engaged in an important extension of the campus in the next decade with 75 hectares in Hung Yen located at 25 km of the main campus in Hanoi.

HUST is directed by a rectorate under the supervision of the University Council and Party Committee.

## RESULTS OF PREVIOUS ACCREDITATION(S)

In 2017, Hcéres delivered an accreditation form 5 years which was extended to 6 years because of the Covid crisis and the recommendations of the committee were:

- The institution should focus more on adjusting the nature of scientific research activities in order to align with the institution's ambitions with the 2030 vision, with the autonomy process and using synergies with its partners
- The institution should reinforce post-university research and training with high quality standards and an international visibility
- The institution should pay attention to the risk imposed by its large scale plans and projects along with the inadequacy of foresight and financial vision
- The importance of establishing substantive administrative quality indicators
- The institution should develop a culture of results and impacts in the different activities including quality control, communication, international...
- The importance of establishing a substantive economic model of high professionalism and a pluriannual approach
- The importance of including students in the different governing bodies
- The need to focus on ethics education and fraud prevention.

Regarding other accreditations, 39 undergraduate programmes have obtained accreditation from international quality assurance agencies (CTI (2), ASIIN (16), AUN-QA (21)).

## II. INSTITUTION'S SELF-EVALUATION PROCESSES

HUST has formed an Executive Team led by a Board of Presidency member and administrative office leaders. The team analysed Hcéres standards and communicated how the self-evaluation report (SER) should be designed. They built data tables, reviewed previous evaluation team feedback, and synthesized university data for SER preparation. Implementing units were in charge of collecting university data from 2017-2022. Finally, they drafted the SER parts and shared it with Institution leaders for feedback, review, and edit content as needed.

HUST self-evaluation report, dated May 2023, is approximately 70 pages long and includes appendices. The report is dense and well structured, and closely follows the standards of the three evaluation fields required by Hcéres. It presents the factual elements with supporting appendices, which allow a good understanding of the functioning of the university, the different developments since the last evaluation in 2017 and the document systematically refers to the recommendations of the previous committee.

There are some graphs and tables to help the understanding of the different parts and the report is easy to read, even if there are some redundances, mostly due to the way the different fields, references and criteria are organized.

Overall, there is a tendency to focus on the future strategic project, on the vision of what HUST should be in 2030, which gives a clear view of the ambition and strategy for the development of the institution. However, it may not emphasise enough the weaknesses of the current organisation of the institution, the short and medium term strategy to change this organisation and the strategic changes needed to achieve the 2030 ambition.

## III. COMPOSITION OF THE EXPERTS PANEL

The experts' panel was chaired by Philippe Lebaron, full professor, Sorbonne University, Paris

The following experts participated in the evaluation:

- Emmanuel Ferrier, Full professor, university of Lyon I Claude Bernard
- Pierre Grussenmeyer, Full professor, Institut National des Sciences Appliquées (INSA) Strasbourg
- Laure Castin, General Manager, University of Reims Champagne-Ardenne
- Dominique Gruyer, Full professor, University Gustave Eiffel
- Layla Lavalle, student expert, University Paris Cité

Hcéres was represented by Amélie Bensimon, Project Manager, Europe and International Department.



## IV. VISIT DESCRIPTION

The visit took place in Hanoi from November 27th to November 28th, 2023. It was divided into twenty-one interviews with internal and external interlocutors at HUST, either for the entire committee or in binomials or trinomials. The participation of the interviewees were previously discussed between Hcéres and HUST, and selected jointly.

The committee had a particularly good welcoming experience with the HUST's delegation and with the general coordination of all interviews. In addition, the working facilities offered to the committee allowed them operating in very good conditions.

The HUST team was both very responsive to all the questions addressed by the committee and very reactive to the need for additional information when needed.

The committee was very satisfied with the quality of the different interviews which helped further in understanding the overall organisation of the HUST and its strategy for the future.

Date in November 2023	Hour	Interviews
Thursday 27 <sup>th</sup>	09 :30-10 :30	Rector and his management team
	10 :45-11 :45	Representative panel of University Council
	11 :45-12 :45	Representative panel of board of Presidency
	14 :00-15 :00	Representative panel of science and academic council
	15 :00-16 :30	(i) Representative panel of heads of research units (ii) Representative panel of heads/deans/school directors of academic units
	16 :45-17 :30	(i) Visit of the campus by a panel of student association leaders (ii) Visit to labs by a representative panel of directors of research centres/institutes
Friday 28 <sup>th</sup>	09 :00-10 :00	(i) Administration – personnel – finance and accounting – facilities offices (ii) Academic Research, Management-external Affairs offices (iii) Student affairs – admission offices
	10 :45-11 :45	(i) Service units (ii) Communication office and responsible for documentary and digital resources (iii) National and international Students
	11 :45-12 :45	(i) Quality assurance team (ii) Managers of valorisation services (iii) Alumni and socio-economic partners
	14 :00-15 :00	(i) Lecturers (ii) Doctoral students
	15 :00-16 :00	Representative panel of French members of the consortium
	16 :30-17 :30	Final meeting with the president

## V. EVALUATION REPORT

### FIELD 1: STRATEGIC AND OPERATIONAL MANAGEMENT

#### **Standard 1: The institution defines its institutional positioning at local, national and international level.**

##### **Towards a recognized research university...**

Hanoi University of Science and Technology (HUST) has meticulously carved out its own position and trajectory, not only within the local and national spheres but also on the international stage.

Since 1956, HUST has worked to become a high-quality multidisciplinary higher education institution and one of the region's leading institutions in engineering and technology, reinforcing technology transfer and providing high quality human resources for the country's industrialization and modernization (Mission, Vision and Core Values, 2017 and Development Strategy 2017-2025 – see SER).

Building upon its remarkable achievements, HUST underwent a significant transformation in 2022, attaining the status of a comprehensive university. This transition further fortified its autonomy, emphasizing financial allocations within the framework of the national educational development plan.

Since 2017, HUST has placed a concerted focus on elevating the quality of scientific research and innovation. A pivotal aspect of this initiative involves restructuring scientific activities around four core fields of Science and Technology: Advanced Materials, Data Technology and Intelligent Systems, Sustainable Energy and the Environment, and Health Sciences and Technology. To fortify its economic model, HUST has fostered closer ties with the socio-economic environment and regional and international partners who share similar values and objectives. The establishment and structuring of an extensive network of alumni also play a pivotal role in fostering connections with the socio-economic world.

Noteworthy projects, funded both by the government and international sources, underscore HUST's commitment to innovation and progress. These projects span various domains, such as the SAHEP Project (Support for Autonomous Higher Education Project) financed by the World Bank, the development of digital teaching and learning materials, and initiatives focused on innovating natural rubber technology for the global carbon cycle.

While HUST maintains its position among the world's top 1000 universities, with a commendable 360<sup>th</sup> position in Engineering and Technology according to the QS World University Ranking by Subjects 2022, it has ambitions to go beyond these achievements. Looking forward to 2030, HUST aspires to secure a place among Vietnam's top five State Universities, granting it precedence in national investment programs, as articulated to the committee by the Chairman of the University Council. By 2030, the university envisions becoming the leading research institution in the region, with a pivotal focus on engineering and technology, thereby assuming a pioneering role in Vietnam's education system. HUST has astutely identified key universities in Asia as reference values, drawing inspiration from their shared properties and success trajectories.

Acknowledging its strengths, HUST is also cognizant of persistent weaknesses that demand attention. The institution recognizes the imperative to fortify its scientific signature by completing the ongoing research restructuring. It aims to enhance internationalization efforts, making the university more attractive to global lecturers, researchers, and students. Additionally, HUST acknowledges the need for improvements in language training and English courses, along with a concerted effort to augment revenue derived from scientific and technological transfer activities. These strategic measures are seen as integral steps in further fortifying HUST's position as a global academic leader, at least in Asia.

#### **Standard 2: Based on its positioning, the institution defines a strategy at local, national and international level, which it translates into operational objectives and which it monitors.**

##### **A relevant strategy and a well-developed road-map**

Hanoi University of Science and Technology (HUST) has meticulously crafted a robust and explicit strategy, anchored in its Development Strategy spanning the period 2017-2025 (refer to SER). Drawing inspiration from the recommendations of the Hcéres committee in 2017, the university has defined a few specific objectives and major development orientations, reflecting its commitment to a progressive and transformative agenda.

Firstly, HUST is dedicated to reforming its institutional administration, transitioning towards an entrepreneurial model that aligns with the legal national framework regarding autonomy steps. This strategic move seeks to enhance administrative efficiency and responsiveness to the evolving educational landscape.

Secondly, the university aims to cultivate regional and international quality standards, ensuring that its academic offerings meet the highest benchmarks of excellence on a global scale. Simultaneously, HUST is committed to developing a comprehensive global and internal quality policy, underscoring its dedication to maintaining and enhancing the quality of education and research.

A third key objective involves the encouragement of innovation in training through international standards. HUST envisions a dynamic educational environment that fosters creativity, critical thinking, and global perspectives among its students.

Additionally, the university is strategically fostering links between education and research, emphasizing the interconnectedness of fundamental and applied research, innovation and entrepreneurship, as well as knowledge transfer and product commercialisation. This multifaceted approach ensures a seamless integration of academia and practical applications, contributing to the holistic development of both students and the broader community.

To operationalize this strategic vision, HUST has translated its institutional strategy into concrete objectives for the period 2021-2025. These objectives are guided by 10 key tasks and key solutions, each of which underwent a mid-term evaluation in 2021. The university has instituted a comprehensive two-dimensional yearly action plan, addressing both administrative and service units, as well as academic units. The progress of strategic orientations is annually assessed by the University Council, and a detailed report is presented at the Year-End Conference and at the Staff Conferences involving all academic and administrative staff. The University Council issues an Annual Report each year, consolidating the outcomes and insights gained from the implementation of the strategic plan.

For effective monitoring, HUST has established a set of quantitative indicators comprising 35 metrics, evaluating and measuring the implementation of the 10 key tasks and solutions by 2025. This monitoring process is facilitated through the eHUST system, and as mentioned earlier, it is conducted on a yearly basis. While the evaluation of the monitoring process may present challenges, the institution views it as a significant accomplishment contributing to the ongoing development and professionalisation of HUST.

The expert committee unequivocally affirms that Hanoi University of Science and Technology's (HUST) strategic positioning is not just credible but indeed indispensable. The credibility of HUST's positioning stems from a carefully crafted strategy rooted in foresight, adaptability, and a clear understanding of the evolving needs of the educational ecosystem. In recognizing the essential nature of this positioning, the expert committee underscores that HUST's commitment to becoming an entrepreneurial model, cultivating global quality standards, and encouraging innovation is not merely a strategic choice but a necessity. In doing so, HUST is not only asserting its relevance but is actively shaping the trajectory of education and research in Vietnam.

### **Standard 3: The institution is involved in its environment and develops a partnership policy as part of its strategy.**

#### **An important development of academic partnerships at both local and national levels.**

Based on its Development Strategy 2017-2025, HUST has strongly diversified its partnerships with other academic institutions (universities and research institutes) and with the local and national industrial and innovation ecosystem in Vietnam, as well as with institutions abroad in recent years.

As recommended by the previous committee in 2017, HUST has defined four prioritized science and technology development orientations for the period of 2018-2025 and towards 2030, including the field of health science and technology. HUST's involvement against the Covid-19 Pandemic has increased its cooperation with medical institutions in Vietnam.

These academic partnerships have been developed with other universities and research institutes in Hanoi and within the entire country. HUST has developed a strategic plan to reinforce these collaborations and play a leading role in establishing partnerships with other universities. HUST has worked on forming partnership with domestic research institutions to promote scientific research activities, technology transfer and innovation: Vietnam Academy of Science and Technology (VAST) or National Innovation Centre (NIC) are some of the key partners.

Hanoi University of Science and Technology (HUST) places significant emphasis on the advantages derived from collaborative efforts in the realms of education, scientific research, and innovation. Particularly noteworthy is HUST's recognition of the inherent benefits of collaboration within the Group of 7 leading technical universities (G7), envisioned as a network of institutions sharing common developmental characteristics. This network

includes notably the three other Vietnamese Universities supporting PFIEV (*Programme de formation d'ingénieurs d'excellence au Vietnam*) : the University of Da Nang – Danang University of Science and Technology, Vietnam National University - Ho Chi Minh City University of Technology and Hanoi University of Civil Engineering

HUST sees the strength in unity, advocating for shared ideas and resources among like-minded institutions to enhance collective international appeal.

Furthermore, HUST assumes a leadership role within the national context, spearheading the G26 group. This initiative aims to foster collaboration between universities and major enterprises, leveraging HUST's extensive network of alumni. By harnessing the expertise and connections within this network, HUST actively contributes to the development of cooperative frameworks that bridge academia and industry, emphasizing the mutual benefits derived from such partnerships.

### **A well-defined strategy to improve international partnerships**

HUST has integrated various international networks, such as the Asian-Oceania Top University League on Engineering (AOTULE) or the South Asian Technical University Consortium (SEATUC) with the purpose of increasing its international influence, expanding its reputation and mainly attracting more sponsorships for research and training activities. HUST wishes to reinforce its relationships at the international level with South Korean and Japanese universities and companies in priority. France and United States are still considered as important partners but cooperation with them depends on funding opportunities.

HUST has clearly set internationalization as a strategic long-term priority and has developed incentives and tools to implement this strategy. Since 2017 for instance HUST has worked on restructuring the welcoming board of international students and has created a faculty of international education to enhance international activities as noted by the committee during the visit. In order to strengthen its international positioning, HUST has set up strategies to attract foreign scholars and has worked on elaborating programmes taught in English (15 today) and joint international programmes (7 today). HUST relies as well on its strong Alumni network to support its strategy of increasing its domestic and international influence.

HUST claims at having developed cooperation with 143 academic partners in 2022 but in reality, cooperation remains modest. For instance, in 2022 only 22 staff and faculty members participated in exchange programmes. HUST must carry out its efforts to fund international activities and to reinforce its attractiveness.

### **A significant opening towards socio-economic and cultural partnerships and territorial integration**

The institution has a very clear strategic plan to set up an efficient innovation and transfer ecosystem and to contribute to sustain its economic model. HUST includes a member unit « Bach Khoa Hanoi Technology Investment and Development One Member Company Limited » called BK-Holdings which was implemented fourteen years ago. It is the focal point for coordinating with companies and alumni to attract funding for technology transfer products developed by faculty members as well as entrepreneurial activities of students. BK-Holdings also regularly organizes courses, seminars, and workshops to promote and sustain entrepreneurial and innovative knowledge for students. An important support is provided for entrepreneurship training and the Centre for student Innovation has been implemented to encourage students to create start-up companies.

To support this opening towards the socio-economic world, representatives from the socio-economic environment participate in the University Council.

The alumni network with more than 100 active members (and potentially much more) is an important asset for HUST because it is a key contributor to the connection of HUST with the socio-economic and cultural worlds. It is headed by the former minister of industry, who is very active and Alumni have their own building on the main campus.

HUST organizes some discussions with stakeholders and state administrative agencies to guide the development of science, technology and innovation and always follows the economic, cultural and social policies of Hanoi and other provinces and cities in Vietnam.

Numerous initiatives in recent years and after covid show that HUST is very dynamic and seeks to open up strongly to the external world. There remains a lot of work to better communicate and structure these activities but there is a strong wish to do well and do it quickly.

### **A need to clarify the impact of the institution on its environment**

HUST contributes to sustainable development policies according to 17 sustainable development goals based on 3 aspects: policy, research and action with community.

The institution has established a fund to assist economically disadvantaged students in continuing their studies, as well as providing support to students affected by natural disasters. It has also implemented policies on clean water sanitation and hygiene, alongside policies facilitating the delivery of free drinking water on campus. Additionally, it actively promotes regulations aimed at energy conservation and efficiency. Furthermore, sustainable development goals are increasingly integrated into research projects.

HUST evaluates the socio-economic and environmental impacts of its activities both through discussions with stakeholders and by using recognized indicators and indexes. It was difficult for the committee to evaluate this activity in depth and the way the results of these policies are used to improve the activities.

It is recommended that HUST works on defining a clear genuine policy of ecological transition and sustainable development coordinated at institutional level (decarbonisation of research, sustainable development and corporate social responsibility master plan, staff training...).

**In conclusion, Hanoi University of Science and Technology (HUST) has demonstrated a resolute commitment to its strong and well-defined strategy, positioning itself as a crucial catalyst for the modernization and professionalisation of high-level human resources in Vietnam. The period since 2017 has witnessed an impressive transformation, with HUST diligently addressing recommendations from previous peer-review evaluations and making notable strides in organisational improvement.**

**HUST's proactive approach extends beyond its campus, with the establishment of a robust network. This network includes strong ties with local industrial partners, collaboration with regional and national universities (such as G7 and PFIEV), and fruitful international partnerships. These collaborations are instrumental in fostering collaborative research initiatives and facilitating the publication of high-quality international research.**

**While acknowledging its persistent weaknesses, HUST remains proactive in tackling them head-on. Priorities include finalizing the restructuring of research units to strengthen its scientific signature, intensifying efforts in internationalisation to attract both lecturers and students, and placing a heightened emphasis on enhancing English language proficiency among students, teachers, and researchers. Concurrently, there is a focus on increasing revenue from scientific and technological transfer activities, alongside the promotion of a robust innovation and transfer ecosystem.**

**Becoming a comprehensive university in 2022 (autonomy step 2) and then a State University in 2030 will give it more possibilities to carry out these objectives. As it progresses along this path, the institution remains ready to make even more significant contributions to the educational, scientific and technological landscape of Vietnam and beyond.**

**HUST is also committed to sustainable development policies. Defining a global policy of educational transition and sustainable development will undoubtedly help the institution measuring and improving the socio-economic and environmental impact of its activities.**

**Standard 4: The governance of the institution is based on an organisation, communication and information system adapted to its strategy.**

#### **Well defined and organized roles at the governance level**

The governance of HUST strictly adheres to legal provisions, with clearly defined functions and tasks for its various bodies. Operating on a highly centralized model, this structure is regarded as immutable and not subject to change but the committee recognizes that the creation of schools has been important as a first step in the development of autonomy. The Regulation on Personnel Management stipulates the standards for and duration of holding management positions throughout the University. It defines the functions, duties and powers of leadership positions and of the management positions of administrative and specialized units by level (see SER).

The University Council is the decision council in charge of HUST strategic development. Composed by 23 members (among them 10 external partners), it has a coordinating and regulatory role. As strongly recommended by the previous committee and since 2017, a student participates in the deliberations of the University Council.

According to the law, the Chairman is a professor elected for 5 years but unauthorized to take on administrative position during his term of office. The University Council decides on research orientations, sets the number of students to be admitted each year, adopts the yearly budget, decides on investment policies, assesses whether the Board of presidency is meeting its objectives. Decisions are taken by a majority of members. Every year the University Council assesses the implementation of the strategic orientations and a report is presented at Year-End Conference and at the Staff Conferences with all the academic and administrative employees. The University Council issues each year an Annual Report.

The Board of presidency is composed by the rector (president), the vice-presidents, and they are assisted by administrative services. The Board is in charge of implementing the decisions of the University Council. It prepares drafts and submissions of resolutions to be decided by the University Council.

The academic and scientific Council is an advisory body composed by professors specialized in priority areas (Electrics, electronics, food bio-technology, environmental techniques, economics, management, mechanical engineering) and deans. It advises on the opening or closing of training courses, as well as on the opening or closing of a research institute. It proposes for instance criteria for the doctoral level of students prior to the thesis.

### **A clear need for the development and reinforcement of both communication and information systems within the institution.**

The internal communication is strictly organized according to the provisions of law. In 2021 HUST promulgated the Communication - External Cooperation Strategy for the period of 2021-2025 to promote the brand identity based on concepts of a prestigious, dynamic, reliable and socially responsible university, according to the SER. HUST has promoted since 2020 a digital transformation to reform administration and governance but within the authorized framework.

Off-campus communication activities are carried out through different channels (website, network sites, newsletter, cooperation with media agencies, social events such as One Day Experience as a HUST student, career orientation activities, Alumni network, etc.). Social events are slated for further development within the institution. (Interview of students and interview of alumni).

Organisation, communication and information system of HUST strictly respect the provisions of law but within this restrictive regulatory framework, HUST steps up efforts to promote its brand and therefore its attractiveness through a great variety of channels. The communication coordination could be reinforced to allow a better integration at the territorial level.

To sum up, in adhering to a well-defined regulatory framework, the roles and missions of various governing bodies within HUST are meticulously outlined by law. Despite regulatory constraints, the university is actively engaged in elevating its brand and, consequently, its attractiveness. This is achieved through a diverse array of channels and a dedicated focus on digital transformation. Recognizing the pivotal role of effective communication and information systems, HUST is definitively on a good trajectory.

## **Standard 5: The institution has a comprehensive quality policy.**

### **A significant improvement of administrative procedures**

Since 2017, HUST has been dedicated to enhancing its Quality Policy. In 2018, a significant milestone was achieved as HUST restructured its former Quality Assurance Centre to align with the evolving landscape of a comprehensive university embracing a global quality policy. The establishment of the Quality Management Office marked a pivotal step towards organizing an internal quality assurance system that encompasses both academic activities and administrative functions.

Adhering to the strict guidelines stipulated by national laws, HUST has diligently ensured compliance with the mandated framework. Concurrently, the institution has undertaken the task of developing Internal Management Regulations, striving to institute a robust three-tier quality assurance system. This strategic move aims to align its processes with international frameworks such as AUN-QA or the European Standards and Guidelines for Quality Assurance, ESG

On an annual basis, all units and staff actively engage in the assessment process, a coordinated effort spearheaded by the Quality Management Office. Comprehensive reports are then meticulously compiled and submitted to the Board of Presidency. This not only facilitates the evaluation of improvements but also serves as a foundation for drafting resolutions presented to the University Council. These resolutions are pivotal in adapting the institution's key goals and tasks, ensuring alignment with evolving standards each year.

Since 2020, HUST has taken a proactive approach by implementing the ISO 21001:2018 Educational Institution Quality Management System Standard. This strategic move has not only demonstrated the institution's commitment to excellence but has also resulted in a remarkable 40% reduction in administrative unit procedures, streamlining processes for enhanced efficiency.

**Standard 6: The institution steers the implementation of its strategy by relying on forecasting tools, budget programming and a structured internal management dialogue.**

**An important work has been done to become a comprehensive university**

HUST, as a public and non-business institution, receives revenue from fee rates, from State budget, from investment projects for development, and from operational activities (training, research and technology transfers). HUST's total revenue in 2022 was 1728 VND billion (equivalent to approximately 66.5 M€) compared to 682 VND billion in 2016. In 2022 tuition fees represented 53,3% of the budget and State allocation 3-4 % compared to 60 % in 2016 and 28 % from State allocation (see SER).

The institution implements centralized financial monitoring according to the regulations for public institutions in Vietnam. The University council is responsible for adopting annual budget and investments plans. The Board of presidency is responsible for monitoring the overall financial situation of the university. The financial management regulations are well established with every entity at HUST.

Since 2017 HUST has worked on salary calculation and payment system for academic staff (now based on job positions and an annual KPI evaluation system) and on increasing the income level of the staff members. HUST has also worked on aligning allocation of finances with the effectiveness and capacity of each unit.

Although it has worked on financial feasibility of the university's strategic project and on preventing risks when planning and implementing projects since 2017, HUST has little room to manoeuvre and is obliged to comply with the State regulations on tuition fees and innovation revenue which hinder it to increase and diversify revenues.

**A business model still to be improved**

In 2022, HUST became a comprehensive university which means it reached the level 2 of autonomy according to the provisions of law. It gives HUST the possibility to increase the tuition fees, to get more flexibility to diversify and develop revenue resources linked with transfer technology activities or with activities of the Alumni network. But HUST is not keen on increasing too much the tuition fees which might be counter-productive for the less attractive sectors for students today, such as technology and science in comparison with banking and TIC, even if there are many opportunities to get a job, as explained during the interviews with the Rector.

Spin-off and start-up companies are recognized as crucial players in developing new revenue streams, aligning with directives from the Vietnamese government. This government aims to decrease State allocations, particularly for autonomous universities, while boosting revenue through innovation and project-based funding opportunities. HUST is willing to apply to calls for local, national and international funding to support its strategic development.

HUST has to carry out working on clarifying its business model in accordance with the State regulations and in the framework of the new status of a comprehensive university obtained in 2022.

**Standard 7: The human resources policy and the development of social dialogue reflect the institution's strategy and contribute to the quality of life at work of its staff.**

**Still improvements to be done to promote internationalisation**

HUST has to comply with strict and detailed national regulations regarding staff positions, staff evaluation and performance, regarding standards and procedures for recruitment, appointment and dismissal of managerial staff.

In this framework HUST has an employment plan with identification of job positions, competency frameworks and corresponding staff level based on the scale and development strategy of HUST for the 2022-2025 period. It includes gender equality principles to be followed. Since 2017, HUST has worked hard on improving the quality of research and teaching.

Nevertheless, while the number of students has risen by 20% since 2017, HUST experienced a 12% decrease of staff members between 2017 and 2022. Indeed, in 2022, the institution had 1701 staff including 1078 lecturers, 10 researchers, 458 administrative staff members and 155 technical staff members compared to 1927 staff in 2016 including 1181 lecturers, 4 researchers, 742 administrative and technical staff for 29 457 students. 814 of lecturers possess a doctorate degree in 2022 compared to 717 in 2016.

HUST aims at having a staffing quota of 2100 (including 1400 lecturers) until 2030 for a target of increasing number of students (60 000). It serves as a basis for developing annual or phased human resources targets to meet the strategic goals of the institution.

Since 2017, HUST has worked on promoting research excellence, through a newly implemented *Excellence Lecturer Recruitment Programme*, that aimed at attracting outstanding researchers both domestically and

internationally. Results are modest till now with 5 new staff members. Further efforts shall be made to foster the internationalization of staff.

To increase staff professionalisation, HUST has developed an annual professional plan for its staff members at every level and has promoted staff mobility to participate in training courses at partner institutions both domestically and internationally (through ERASMUS + for instance).

#### **Standard 8: The institution integrates a real estate policy that supports its development into its strategy.**

Since 2017 HUST has not improved on establishing a real and feasible estate policy for many reasons: higher costs for infrastructures upgrades; unfavourable concessional loans terms due to State regulations and restrictions; obligation to respond to the governmental decision for many years to relocate university campuses outside of Hanoi centre.

The planning and developing of campus 2 (75 ha in Hung Yen province, 25 km away from campus 1) has been approved by Prime Minister in February 2023 but there is still no clear visibility on how it could be funded.

A mid-term investment plan of HUST has been adopted by the University council for the period 2021-2025.

From 2017 to 2022 HUST's total budget from infrastructure investment projects within campus 1 exceeded 800 billion VND and come from investments projects, concessional loans from the World Bank (SAHEP project), from the Asian Development Bank, national funds allocated to renovation, lease locations (since 2022 – see SER).

HUST has also recently worked to improve asset management thanks to eHUST online administration.

HUST has still to work on establishing a real and feasible estate policy and on improving accessibility and quality of dormitories to reach international standards.

**In conclusion, a well-defined and comprehensive strategic plan serves as the backbone of HUST's commitment to excellence. This plan encompasses clearly outlined objectives, an operational action plan, and an annual assessment that actively involves the entire academic and administrative community. Notably, the institution has set a visionary goal to attain State University status by 2030, showcasing its dedication to long-term development.**

**Challenges persist, particularly in the realm of doctoral candidates. The national context, coupled with unattractive scholarships for doctoral candidates and the prevalent issue of brain drain due to high tuition fees and a lack of scholarships, poses a significant hurdle. Many doctoral students find themselves compelled to work in companies due to the absence of scholarships.**

**Despite these challenges, HUST has demonstrated resilience since 2017 by diligently exploring the financial feasibility of its strategic projects. However, the institution faces constraints in diversifying revenues and is bound by stringent state regulations. This awareness of limitations does not deter HUST's commitment to progress; rather, it underscores the need for strategic planning and resource optimization within the established regulatory framework.**

## FIELD 2: POLICY ON RESEARCH, INNOVATION AND THE INCLUSION OF SCIENCE IN SOCIETY

#### **Standard 9: The institution's research policy defines structural guidelines.**

##### **An important development of strategic choices and research policies**

Hanoi University of Science and Technology has designed a clear policy, the "Development Strategy of HUST for the 2017-2025 Period, with a Vision up to 2030", aimed at enhancing research management and production efficiency. The strategy focuses on increasing international scientific publications with a 30% Q1 ranking, providing at least 10 patents and utility solutions annually, prioritizing four main research areas, and achieving 15% of the total HUST budget revenue from knowledge transfer and commercialisation.

In order to achieve these objectives, HUST has developed and implemented 6 main initiatives to promote, attract resources, and enhance the quality and effectiveness of research. Most notably, HUST has engaged a development plan for four priority research areas involving "Data technology and intelligent systems", "New materials", "Energy and sustainable environment", and "Health science and technology". This strategy uses the existing human resources, the strengths in research, and a centralised investment mechanism. In this context, HUST has reorganized its research around departments, institutes and research centres, and laboratories.

HUST has also started to develop a policy to reward faculty members with good research capabilities by applying evaluation criteria for their research activities. This policy should have a positive impact on the



productivity and quality of research. Finally, HUST has worked on the development of a project to attract outstanding faculty members during the 2021-2025 period (both domestic and international) and has adjusted the criteria for selecting, implementing, and evaluating research projects at the basic level and increased the funding allocation for research.

### **Significant achievements has been made since 2017**

HUST monitors the progress of the research result and quality, through an analysis of statistical data taking into account scientific publications (domestic and international) by academic staff, researchers, students, and PhD students; scientific quality of relevant journals/conferences; and quantity and content of intellectual property certificates. These statistics and this evaluation process are used as a tool to adjust policies and research processes, to propose improvement measures, to allocate resources, to assess the feasibility of strategic research and innovation goals.

HUST was able to demonstrate some major achievements, regarding the scientific valorisation and production. For instance, an average annual increase of 10% of international publications was achieved. In 2022, the number of publications in the WoS/Scopus system reached 882 (499 in WoS and 383 in Scopus respectively). The number of scientific publications, involving undergraduate students and postgraduate candidates also has significantly increased (10 in 2019 and 379 in 2022). The state's requirement is 0.3 publication per researcher. While HUST surpasses this (0.81 journals/ lecturers, researchers, technical and practical assistance staff , according to the committee's calculation), to attain international research university status, it should reach the global criterion of at least 1 Q1 publication per researcher and per year.

These results align with HUST's policy to incentivize and encourage students and researchers in publication endeavours. Nevertheless the committee notes that HUST currently lacks a clear strategy for conference and journal selection, the only requirement being to publish in A-rank (Q1) journals. Significant achievements were also made regarding intellectual property (IP), with an increase of 10% per year of the number of intellectual property certificates granted, and 10% of the number of granted patents.

HUST enhances quality processes by applying ISO standards to research management procedures. Digital transformation is employed to efficiently manage research metrics, reaching 85% implementation in research management.

A key initiative involves supporting research projects, with over 30 national and ministry-level projects approved in 2017. In 2022, HUST registered 129 new projects, demonstrating a significant increase in interdisciplinary initiatives. Additionally, the new research policy includes expert groups for efficient collaboration with industrial partners, resulting in increased industrial contracts. However, the number of new projects fell short of expectations due to limitations in research personnel and equipment, complex administrative procedures, and insufficient connectivity among experts both domestically and internationally. Additionally, state budget funding remains limited. Revenue from business and services stays almost constant for the last 5 years (see SER appendix 2 page 83).

### **A well-established network of partners committed to the development and internationalisation of education and research**

HUST actively cultivates collaborations at national, regional and international levels, engaging with academic, economic, cultural, and social organisations, facilitating events with domestic and international entities, including large corporations (such as Ericsson, Samsung Display, LG Innotek, etc.). At national level, HUST remains a key member among seven leading science and technology universities in Vietnam and a standing member in a network of 26 technical and technological universities. Additionally, HUST collaborates with the National Innovation Centre (NIC) under the Ministry of Planning and Investment to augment the contributions of the research and innovation activities within the network to the country's development. These initiatives offer valuable opportunities for academic activities, student support, and research development. Internationally, it holds key roles in eight prestigious educational organisations, including ASEAN European Academic University Network (ASEA-UNINET) or the Southeast Asian Technical University Consortium (cf. SER p32), engaging in open calls, securing support, acquiring laboratory equipment, and expanding connections with universities in Asia and Europe, with a primary focus on Asia. Serving as Co-Chair of the Vietnam-UK Higher Education Partnership Network, HUST collaborates with the British Council on education projects in Vietnam. While an agreement with Europe for involvement in Horizon Europe call consortia exists, its potential remains untapped and should be significantly developed.

The strategy and action plans started for international highlighting are based on both training and research policies with five main groups of actions: education and research, international learning and working environments, modernising infrastructure, strengthening communication and building international cooperation networks, and innovating management. Relationships with partners in the UK, US, and Japan have been established. Joint projects and laboratories have been built like JICA-funded ESCANBER Phase 2 project, the

KOICA-funded Korean project, and the SAHEP project, which provides 15 research laboratories in the fields of Mechanical Engineering, New Materials, Electrical and Electronics Engineering. HUST has significantly expanded its collaboration with renowned global higher education institutions, boasting a total of 66 close partners as of 2022. This marks a remarkable increase of approximately 53% compared to 2021 and a notable surge of 135% compared to 2017.

In the four priority domains, the committees underline that the collaboration network is relevant and efficient, and provides interesting outcomes. It is necessary and important to maintain and develop this dynamic of collaboration and partnership. Leveraging these networks can foster effective research collaborations and enhance the university's appeal to PhD students and top-tier scientists.

### **A commitment to comply with integrity and ethics in research**

In accordance with Decree 109 of 2022, HUST upholds integrity and ethics in research, adhering to the regulations of the Science and Technology Law. In pursuit of international goals, the university organizes international scientific councils to collect assessments from global experts, seeking advice and knowledge for research laboratories improvement. In addition, HUST collaborates with the Intellectual Property Office of Vietnam, Ministry of Science and Technology, to organize training courses on copyright and intellectual property in research activities. These courses aim to raise awareness, promote scientific ethics, emphasize the principles of scientific integrity, and improve understanding of intellectual property and copyright.

### **Scientific production is widely disseminated and digitalised**

HUST has established a communication policy for disseminating research products through diverse channels such as social networks, conferences, exhibitions, and its website. A notable emphasis is placed on online availability of scientific content in digital formats. The Bach Khoa Publishing House, a specialized service, publishes reference books, textbooks, and conference proceedings for the education system, contributing to widespread dissemination of scientific and technological knowledge. Jointly managed with other technical universities, this service also oversees The Science and Technology Journal of HUST, adhering to standards and practices of open international scientific publishing houses.

## **Standard 10: The institution has a policy resource and support for research.**

### **An organisation that partly reflects the strategic choices on priority areas**

In 2023, HUST research structures consists of 10 schools, 3 faculties (only general education courses), 6 research institutes and centres (8 indicated in the organisation diagram from May 2023), hosting multiple laboratories (ie, the AI Centre, comprising 8 labs and 50 researchers), and nearly 100 research groups. Laboratories and academic staff can be engaged in collaborative research and development activities with partner organisations, utilising shared facilities to optimize resources. Contract management is overseen either by the valorisation company (BK Holding) or the Department of Science and Technology.

Since 2017, following Hcéres recommendations, HUST has significantly reduced the number of institutes and research centres, going from 15 to 8 research institutes in 2022. HUST has also overhauled the organisation of research units, establishing interdisciplinary laboratories to promote and support the research in the 4 priority areas as, for example, FINTECH centre, Smart Digital Factory Laboratory

It should be noted that among the 44 laboratories, only 12 are mostly working on the 4 priority areas. 15 research labs are existing in chemistry – Food Biology – Environment – and Electrical and Electronics engineering. The research units (institutes, centres, laboratories) involved in priority areas benefit from support from the University. For other laboratories (32 laboratories), even if they receive some operating supports from the University, they must secure some additional funding in order to develop their own activities.

The committee acknowledges that HUST has made significant efforts since 2017 to refine the organisation of research, with the potential to significantly enhance research quality in the medium and long term. Managing the distribution of funding and human resources is crucial to consolidate the current strategy and avoid dispersion of research teams in underfunded areas. Maintaining a scientific policy encouraging the emergence of new, disruptive themes is vital for a robust innovation dynamic.

### **A need to strongly reinforce human resources for research**

In 2022, the Institution had 1.701 staff (1 886 in 2017) which means 9,8% reduction in the workforce (a loss of 185 agents) between 2017 and 2022 and a loss of 84 teachers and researchers. The main reason is probably because many lecturers and researchers left HUST in order to be hired in a fast-growing industry. In the same time, the number of researchers has increased from 4 in 2017 to 10 in 2022. In 2023, the HUST's academic staff is 1,359 with 60% PhD holders and 20% professors. Most lecturers are involved in research projects and grants with both industrial partners and ministries. Unfortunately, the number of PhD in the teacher/research staffs remains weak

and needs to be increased. Moreover, the skills of teachers/researchers for English lectures remains weak as well.

In order to re-open lecturer positions, a long and cumbersome administrative procedure ("demand process") seems necessary. At the same time, it is necessary to develop and to improve the attractiveness procedure in order to hire outstanding new teacher/researcher with PhD thesis and English skills.

Furthermore, the basic structure of research at HUST is based on the "laboratory". The laboratories are mainly made up of a single "permanent" researcher who is the laboratory director, and a team of students (masters, PHD students, engineers) who develop solutions and products. This structure which is the same in other countries in the world is fragile since the departure of the permanent researcher calls into question the viability of the laboratory. Nevertheless, a positive point is that because of the close relationships between teaching/training/laboratories, laboratories continually have human resources available but the part of technicians and research engineers is weak. This teaching/training/laboratory relationship is also important because it makes it possible to train students, as part of their academic curriculum, more efficiently to research domains.

### **The low attractiveness of PhDs and masters questions the sustainability of laboratories in the long term**

In HUST, students start research training very early. It is for this reason that the number of publications grew significantly since a couple of years and most of them are written by engineer and master students under the supervision of the laboratory director or teacher. However, the number of students has been in constant decline for several years. Indeed, the fill rates for the 2<sup>nd</sup> and 3<sup>rd</sup> cycle programmes are uneven: only 9 PhD programmes (out of 26) involve at least 5 PhD Students. In Master programmes, 5 (out of 41) of these programmes involve less than 5 students and 2 programmes do not have students in second years. It seems very problematic to attract masters (2638 in 2017 and 1305 in 2022) and especially doctoral students who are the lifeblood of a laboratory.

The sharp reduction in the number of doctoral students (527 in 2017 and 160 in 2022) seems due to the greater attractiveness of companies and the high salaries offered by these companies. In addition, doctoral scholarships are low and tuition fees are expensive. In a lot of cases, doctoral students often have to find additional works and money sources (involvement in research projects) to support their life expenses. The management of HUST is aware of this issue and assumes that it will not be able to increase the number of doctoral students in the short term. The reduction in Master and PhD thesis students was presented as a national phenomenon since 2018. In 2023, only 30% of research students recruitment could be achieved. The planned recruitment objectives are therefore very difficult to achieve. This situation could be critical for some laboratories missing student resources and should be given special attention.

HUST management team hopes that the doctors trained in foreign universities will return to Vietnam and be recruited as high-quality teacher-researchers who can provide teaching in English. The recruitment of these new highly qualified personnel will also make it possible to develop the research and valorisation aspect of research. It will be possible to attract these doctors returning to their country to develop research at a high level only if salaries are attractive. It is a bet on the future. This risky strategy weakens HUST and its capacity to develop innovative research in the short term. Nevertheless, it seems to be the only possible short-term solution.

### **A need to improve fundings and scholarships**

In addition to securing research funding from state agencies, international collaborations, and businesses, HUST annually allocates a portion of its budget to support and promote new research activities, reflecting an increasing trend with open and encouraging policies. HUST funds around 150 to 200 projects annually, emphasizing a notable shift in research funding policy since 2020, with dedicated budget allocation for conference sponsorship, despite a decline in proceeding papers (563 in 2017 to 193 in 2022) and a substantial increase in journal papers (388 in 2017 to 973 in 2022). Funding for business cooperation and exchange scholarships has also risen, primarily for short-term stays and officer exchanges abroad. Increasing such funding with higher salary could attract more high-end foreign researchers on longer stays (at least six months), necessitating the creation of a specific position for associated foreign professors who can contribute to teaching, student supervision, and long-term research projects. In 2022, the number of invited researchers was below 25.

In 2023, HUST offered 100 scholarships for research students (Master and PhD), with an additional 20 scholarships from Taiwan and a few (3-4) from Korea and Japan. While PhD students receive extra funding for mandatory equipment and conference participation, the scholarship amount is moderate. To attract more PhD students, alternatives include offering additional salaries and encouraging industrial partners to contribute (especially for industrial PhD theses). For instance, VIETTEL communication provides some scholarships. Another recent strategy involves establishing Master and PhD "joint programmes" with foreign universities to enhance co-supervision. Developing the co-tutela program could be a relevant solution to attract more students.

Benefit and budget from contracts can be used in order to fund PHD thesis and master student scholarship. But research collaborations and technology transfers between HUST and external partners are still limited. The total budget for science and technology services in 2022 amounted to only VND 63.72 billion (2,4 million euros), with 88 contracts.

### **An incentive-based policy for researchers**

The current status of human resource development mentioned above has a certain impact on the process of promoting research activities in general, and on the strategic goals of innovation and bringing science to life in particular. HUST propose and develop a policy to reward faculty members with good research capabilities by applying evaluation criteria for their research activities to determine additional incomes.

HUST has a policy to encourage its staff to innovate and annually propose initiatives and improve operational efficiency. For lecturers, the institution has a policy of rewarding and increasing salaries for those who have a good number of quality international publications, highly regarded research products and research products that are transferred and applied to life and production.

Researchers involved in projects also can have an additional salary. Projects provide a significant scale-up for salary. In the HUST research policy, a research evaluation system (part of quality assurance process) will be implemented for new hires. Moreover, the new hire status will be modified with no permanent position in the future (A government guideline not yet effective). The salary of these new researchers will be tuned and negotiated from their KPI results (number of publications, projects, valorisations...).

**In conclusion, HUST has launched strategic initiatives since 2017, aiming to elevate its research and innovation landscape and achieve its medium-term goal of becoming a research university. Despite notable achievements and top-tier rankings (regionally and nationally), the institution faces challenges, including a shrinking workforce and limited funding from transfers and valorisation. HUST's significant strengths include robust national and international collaborations, state-of-the-art facilities, and a dynamic valorisation ecosystem, involving start-up creation. It is essential to emphasize HUST's commitment to fostering research, innovation, and collaborative projects, along with its focus on aligning research with industry needs. This positions HUST as a central player in Vietnam's academic and technological landscape.**

**The currently deployed support policy is significant, taking into account the 2017 recommendations, but still proves insufficient and requires further improvement, especially regarding the recruitment of PhD students, which is becoming increasingly challenging. This situation, influenced by numerous factors (strong attractiveness of companies, insufficient scholarships, excessively high tuition fees, etc.), is critical and weakens the development of academic research. Indeed, the functioning of research relies predominantly on laboratories whose driving force consists of master's and doctoral students.**

**Although the number of publications has increased, this growth is primarily based on the contribution of undergraduates and master's students, leaving doctoral candidates in the shadows.**

**The early initiation into research at the undergraduate level is very interesting and important, but the implementation of the strategy in laboratories poses a problem. Teams in laboratories seem to have difficulty appropriating the challenges of the four identified priority areas, hampering the coherence and effectiveness of research efforts. Moreover, only 12 laboratories are mostly involved in these four areas. The other 32 laboratories must secure additional funding. It is important to reinforce the communication about this strategy and to show that non-priority areas remain important and must develop on their own even if they do not benefit from the same financial support.**

**Standard 11: In its policy of innovation and inclusion of science in society, the institution defines structuring guidelines.**

### **Strategic choices to promote knowledge transfer and to develop research eco-system**

Within its innovation policy, HUST outlines distinct directions: fostering a harmonious connection among basic research, applied research, and implementation research; integrating research with education, creativity, and entrepreneurship; advancing knowledge transfer and product commercialisation; and emphasizing the enhancement of research achievements and potential.

Encouragement is given for collaboration with businesses and the expansion of partnerships to cultivate an environment conducive to scientific connections, technology transfer, and attracting research investments for faculty members. This initiative aims to promote knowledge transfer and the practical application of science and technology in daily life. A set of significant results have been obtained like the cooperation project between the institution and VMED group, Medical compressed air station BKVM-MedAir 1.0 and a 30L/min scale BK-O2-01 oxygen generator, the technology which separates and recovers fluorescent powder, products to support Rang Dong Light Bulb and Thermos Joint Stock Company.

### **An effort to develop support for student and innovative activities**

A set of equipment and facilities are available for students who are interested to develop industrial products and create their own company. These facilities belonging to laboratories are also used in the academic cursus of students. It is important to highlight the strong interaction and relationship between teaching & learning / laboratories that was evident during the committee's visit of the 7 laboratories.

One example of achievement is the BKHUP Coworking Space managed by BK Holdings with an area of up to 1200m<sup>2</sup>, launched in December 2016. It is a modern and professional space according to international standards and has officially opened, attracting thousands of students to participate in start-up training courses and facilitating innovative activities, not only for students of the institution but also nationwide.

HUST allocates resources to foster innovative environments for both students and staff, investing over VND 220 billion in research laboratories from state budgets and diverse funding sources. Pioneering the establishment of two co-working spaces and an innovation and entrepreneurship hub, HUST has cultivated a thriving start-up and innovation ecosystem. This comprehensive initiative spans idea generation, in-depth research, incubation, acceleration, and commercialisation, supported by the BK-Fund investment fund, drawing interest from enterprises and investors.

### **Dynamic policy to promote innovation and disseminate scientific knowledge**

HUST actively showcases the technology transfer products developed by the institution. For instance, since 2017, HUST expanded its innovation competitions, including the annual Student Research Fair and the Young Innovation Competition, attracting creative groups from various universities in Hanoi. Sponsored by major corporations like VNPT and Viettel, these competitions highlight research ideas nurtured at BK Hub – HUST. Other impactful competitions include the Innovation Hackathon, or the Techstart technology start-up competition, which drew 35 projects from Hanoi in 2022 and has experienced significant growth in 2023, with over 70 registered projects from more than 20 universities nationwide, involving over 150,000 students. Moreover, annually, HUST co-organizes an Open Day to present its academic programmes and offer career orientations to the community. BK Holding maintains a strong relationship with students and regularly organizes courses, seminars, and workshops to promote and nurture entrepreneurial and innovative knowledge for students. More focused on research event organisation, after the COVID-19 period, HUST hosted 13 international conferences, featuring numerous papers submitted by research students. To support its dissemination policy, HUST collaborates with local or National bodies; for instance, with the Hanoi Department of Science and Technology to organise a digital transformation exhibitions for the city. Internally, this policy is the result of collaborative efforts from Research Management Office, External Affairs Office, Student Affairs Office, and Youth Union.

With the goal of initiating and executing scientific projects that entail knowledge-sharing with the community, HUST has undertaken various initiatives, with a special focus on applying information technology and digital transformation in higher education teaching and learning. For instance, HUST is undertaking a complementary project aimed at enhancing the quality of teaching for educators in remote mountainous areas through the development of E-learning lectures. The project involves activities such as exploring digital learning resources, digital games, and providing guidance to teachers on creating digital learning materials and digital games. Finally, HUST has developed sustainable researches with some projects dedicated to environmental treatment in agriculture, promoting clean and environmentally friendly production technologies.

### **The valorisation strategy is supported by the participation of prominent companies in the governance, and by a system of referents for research cooperation**

The HUST Council, overseeing activities and providing strategic direction, comprises representatives from prominent Vietnamese corporations like the Vietnam Posts and Telecommunications Group, Vietnam Textile and Garment Group, Vietnam Gas Corporation, and Vietnam Electricity Group. These representatives, including current and former leaders, offer valuable recommendations for enterprise cooperation and the commercialisation of research outcomes.

Concerning the governance model, HUST designates a member of the Board of Directors (BOD) to oversee research and enterprise cooperation activities. This BOD member manages administrative units, including the Research Management Office and the External Affairs Office, with the responsibility of establishing and fostering collaborative relationships. The aim is to guide research activities that closely align with the practical needs of production and business while integrating research outcomes into the operational activities of enterprises.

In specialized units, there is at least one leader responsible for research and international cooperation, actively cultivating current relationships and expanding the network of partners both broadly and deeply. Regular information exchange occurs among the leaders of the Board of Presidency, relevant offices, and these units to ensure cohesive and effective cooperation.

**Standard 12: The institution pursues a policy of resources and support that benefits its activities in terms of innovation and the inclusion of science in society.**

**A new ecosystem of innovation and entrepreneurship**

Since 2017 HUST has developed an efficient and functional organisation for the valorisation and transfer of research based on 4 main pillars:

- Management and funding of IPs, and interface with government demands: the Department of Science and Technology for Intellectual Property management and project/contract with government and ministries,
- Management of industrial contracts: One company to provide interface with the industrial world allowing to manage and negotiate industrial contracts,
- Funding of research projects/products and support start-ups: Two companies to fund/support and incubate manufacturing products (high level of TRL) through the creation of start-ups, involving support and funding for student entrepreneurs.
- Support student and HUST programmes: The 3 previous pillars act, collaborate, and rely on the alumni network provided small upstream funding and contacts for new projects and contracts.

Regarding recommendation from 2017, HUST has promulgated and continuously improved the Financial Regulations and Internal Spending Regulations, plus examined BK Holdings to have policies that generate revenues and attract financial investments, serving the sustainable development goal within the process of implementing strategic tasks.

**A strategy for intellectual property**

At HUST, the Intellectual Property Team plays a crucial role in supporting faculty members by aiding in the editing of forms and submitting applications for intellectual property. This dedicated team receives official documentation from the Intellectual Property Office of Vietnam and promptly forwards it to the respective authors. Serving as a liaison between authors and the Intellectual Property Office of Vietnam, the team facilitates effective communication and coordination.

HUST adheres to a policy of funding the upkeep of awarded intellectual property certificates. As of the current date, from 2018 onwards, the institution has acquired ownership of a total of 64 intellectual property certificates. The management of these IP (patent, license, etc.) is made and supported by the Department of Science and Technology. Department pays for the patent registration and the maintain of patent.

Moreover, for large scale projects in direct contact with the government and ministries (i.e., New ID card project), the "Department of Science and Technology" manages these projects with help and involvement of BK Holdings. In this context, Department of Science and Technology builds a task force with BK Holdings and several laboratories, research centres, and institutes in order to provide the best solution and the adapted/dedicated resources (researchers, engineers, facilities) to answer efficiently to the project.

**The strategic role of BK-Holding to coordinate industrial transfers**

The BK-Holdings enterprise model, which belongs to HUST (Vice president of HUST manages BK Holdings), has been implemented for over 14 years and is currently fulfilling its mission of connecting with businesses to apply scientific and technological advancements to real-life situations. BK Holdings is the key mechanism to manage and coordinate industrial transfer with enterprises (with a relationship with alumni). BK Holdings tries to attract funding for technology transfer products developed by faculty members as well as entrepreneurial activities of students. BK Holding negotiates contracts with industrial partners and manage accounting and law aspects.

BK Holdings has 5 members, a staff of 300 people (BK Holdings has the capability to hire its own employees), and has a set of subsidiaries in Vietnam and abroad (Japan, Paris, Canada). This company has the possibility to sponsor, to support (consulting), and to managed start-ups and spin-offs (it is not the case for HUST) allowing to increase the incomes and additional budgets for HUST. IP from start-ups and spin-offs are managed by BK holdings but belong to HUST. In this framework, BK Holdings maintain a strong relationship with External Affairs Offices of HUST. The turnover of BK Holdings is 10 million spread over 3 main activities: commercial and transfer, funding, training. Nevertheless, 70 % of the turnover comes from education activities (high school, short term and long-term training and teaching). Less than 25% comes from technology transfer and innovation projects, very tiny turnover (5%) comes from expertise. This means BK Holding could be seen as a private school belonging to a public university.

However, sometimes research centres negotiate contracts with industrial partners without the help of BK Holding. It is the case of AI centre. This special case seems to be a legacy of the past operating. In respect to the research law, a research centre cannot contract directly with a company. In this context and with the current research organisation, it could be relevant to standardise the research operating with respect to the 4 pillars, and to use BK Holding in order to manage the industrial contracts.

## **Valorisation supported by a strong alumni network, Start-up Fund and BK Fund**

The alumni network at HUST is actively supporting the institution by organizing regular events to highlight HUST. The network consists of 17 national and worldwide alumni structures, with the goal of reaching 100 worldwide connected associations. It strongly benefits from the network of its current president, former Minister of Science and Technology. The alumni association helps students find jobs, provides internship scholarships, and encourages investment in innovations. Some funding help the students to stay more time in companies or in research projects managed by laboratories in HUST. They also participate in events, exhibitions, and provide funding for internships, research projects, and organize student contests for practical projects. The main objectives of the alumni association include developing communication, helping students find jobs, providing advice, supporting start-ups, and providing funding for specific equipment and facilities.

One major contribution of the Alumni community was to set the Start-up Fund and the BK fund, for the purpose of investing in potential start-up projects. The cooperation with companies has great potential, but there are still limitations due to barriers in financial procedures, especially for state-owned enterprises due to the Law on the use of budget and investment capacity. Scholarships and funding coming from these 2 companies provide opportunities to the students to build their own company.

**In conclusion, HUST has been able to create a robust innovation and transfer ecosystem and has implemented the means and initiatives to establish strong and lasting collaborations with both national and international companies. These initiatives are strongly supported by the companies BK Holdings, BK Fund and the Start-up Fund, as well as by the growing involvement of the alumni network. HUST's investment in infrastructure and testing facilities, particularly in the 44 laboratories, plays a central role in facilitating research and development. However, it is crucial to address the mediation deficit, highlighting the need to strengthen communication mechanisms and awareness events to promote and increase the visibility of HUST. BK Holding's involvement in the management of industrial contracts is a strategic step that promotes synergies between academia and industry.**

**Continuing education and a smooth transition between secondary and university education are essential for skills development and a sustainable flow of human resources to HUST and the laboratories. HUST has been able to implement support and reward mechanisms for researchers and students who produce quality research and both scientific and industrial valorisation. It is important to emphasise that the valorisation eco-system provides assistance, advice, training, and financial support to researchers and students who want to create their start-ups. Nevertheless, the implementation of quality procedures for research will be essential to significantly improve research management and production at HUST. It is also important to further develop the policy of financial incentives for researchers and students involved in research and valorisation activities.**

## **FIELD 3: EDUCATION, STUDENT AND CAMPUS LIFE POLICY**

**Standard 13: The institution has a quality teaching policy and teaching offer, consistent with its positioning and strategy.**

**The diversity of courses and degrees in engineering is coherent with HUST strategy of becoming a recognized scientific and technological university**

HUST is a historic Vietnamese university that has built up a range of 44 academic units, including 3 faculties and engineering schools, covering most industrial sectors (mechanical engineering, transport, mechatronics, textiles, information technology, IT, chemistry). Student numbers are stable overall, at just over 40,000, with a 20% increase since 2017. The organizational model of Hanoi University of Science and Technology (HUST) is that of a comprehensive university, which includes many schools within specific academic fields. Each school takes responsibility for organizing and managing graduate education and research for its respective discipline. The length of the studies, which used to be spread over 6 years, has since evolved positively, with a Bachelor's cycle that now lasts 4 years and a 1.5-year Master's cycle. Each faculty/school offers 2 to 5 specialties for a total of 70 bachelor's degree specialties, but some (9) have few or no students. It is recommended to review course offerings in medical physics and naval engineering, for example, to revitalize the range of courses on offer.

Each faculty offers 1 to 3 Master's programs and a total of 41 Master's programs, some of which can be taken for credit at international partner universities. Again, 6 master's specialties have fewer than 5 students. HUST offers 27 doctoral degrees, covering the broad disciplinary spectrum of this sector. A total of 123 students are engaged in thesis preparation, and each specialization has between 1 and 13 doctoral students enrolled.

HUST's strategy to be a science and technology university recognized in Vietnam and internationally is therefore in line with the institution's policy in terms of the diversity of its courses and degrees. This offer is also consistent

with the needs of the local socio-economic world, the recruitment market and the training needs of the country's lecturers & researchers. Bachelor's degree programmes are labour market oriented (most students are recruited in Vietnam after the bachelor's degree), while master's degree programmes are research-oriented, with doctoral programmes aimed at training future HUST lecturers and researchers as well as Vietnamese industry executives.

### **Research-based learning is well developed**

Programmes are linked to research, and students are introduced to research through research-oriented masters' programmes with modules focusing on scientific research methodology, seminars and tests, mini-projects and graduation projects. Students are also involved in research through collaboration with the university's PhD students and permanent researchers. HUST's policy of research based learning has enabled it to innovate in terms of scientific projects. Some bachelor's and master's projects (whose subjects are initiated by students) can be financially supported and developed with the help of researchers in HUST laboratories, and it should be noted that the university has invested in new testing platforms for teaching and for research purposes. It is worth mentioning that the best master's students are encouraged to participate in the publication activity of their project, with a very sharp increase (10 publications in 2019 and 379 publications in 2022).

Hosting students in laboratories is strongly encouraged, but current space constraints and the lack of laboratory space limit internal research at the university and require international collaboration.

HUST currently has 123 doctoral students attached to each faculty, and offers scholarships and teaching assistant contracts. These doctoral students are expected to join the HUST team of lecturers and researchers. Training in scientific and ethical integrity is offered but not mandatory. There is no plagiarism assessment tool. The training policy includes access to scientific documentation, thanks to the pooling of resources at the university library.

Research support is a key element of the HUST's project to create experimental platforms on the second campus. These platforms will be set up around the masters programs. Although these platforms are only part of the project for the moment, HUST's development strategy in this area deserves to be emphasised.

### **HUST is strengthening its doctoral programmes through cooperation agreements with its international partners.**

Doctoral students are co-supervised by professors from international partners and have access to foreign laboratories. The number of international partners associated with the university has risen by over 40%. The number of incoming and outgoing mobility students is still low (121 incoming students at Master's level and 110 outgoing students), but has risen sharply since 2017, when mobility was virtually non-existent. It will be interesting to continue this effort by encouraging co-supervision and co-direction of thesis. HUST is also involved in doctoral training abroad as part of the Vietnamese government's project 89. The institution has sent a number of lecturers abroad thanks to these projects. Finally, it shall be outlined that HUST is also involved in several exchange programmes.

### **Efforts to boost the attractiveness of PhDs but the results are still limited**

The committee estimates that the development of digital technology and the aim of introducing more research at master's level with industry participation is a good tool for developing PhD, but the number of master's students is growing slowly, less than 100 students. The university has introduced a selection of students at bachelor's level into a few programmes of excellence, selecting students according to regional industry expertise. The aim is for 60-70% of students to continue their studies at master's level, and to offer students a semester in a company to encourage the development of PhDs. The idea is then to select students for the PhD and keep them in-house as teachers afterwards. This should increase the number of PhD candidates.

## **Standard 14: The institution develops a set of institutional mechanisms to ensure the pedagogical quality of its teaching offer.**

### **Multidisciplinary is well represented in the range of courses on offer.**

It is interesting to note that multidisciplinary is particularly present in programmes of excellence such as the ELITECH program. Each programme offers classic cross-disciplinary courses (mathematics, physics, chemistry, etc.), reinforced by specific complementary courses. It should also be noted that some courses are shared with several schools and faculties, to facilitate cross-disciplinary training. It should be noted that grouping courses into specialties is an excellent initiative for adding multidisciplinary and attractiveness to the course offering. This approach is coupled with research activities and testing platforms, which should contribute to the quality of the students trained, as witnessed by the feedback from industry on the quality of HUST students when they join the industry. The programmes have integrated 9 credits for social skills, including topics such as "soft



skills training," "business ethics and entrepreneurial spirit," and two company internships, aiming to equip students not only with specialized knowledge but also with professional skills.

### **Few leverage to develop inbound and outbound internationalisation**

HUST is intensifying its cooperative relations with universities around the world and carrying out academic exchanges. Faculties or Schools are responsible for welcoming incoming international students in accordance with cooperation agreements. International students represent only one percent of the total number of students. For incoming students, the majority of courses are in Vietnamese (1/3 in English), and students from countries bordering Vietnam already have a good level of language skills when they arrive. It should be noted that 2 months of complementary courses are offered to bring them up for the Vietnamese language. This initiative is commendable in terms of integrating foreign students, but it is far from sufficient to enable students who have not already received an introduction to Vietnamese to follow courses in this language. This incoming mobility is a good way of ensuring the university's influence in South-East Asia. The scholarship budget for student and staff exchanges reached 8.5 billion VND in 2022, a 133.5% increase compared to 3.6 billion VND in 2021, although the results are modest with 121 incoming students at HUST so far.

International education is provided through credit-bearing exchange semesters. This is an interesting collaborative format, but in 2022 fewer than 110 students have demonstrated mobility. From the point of view of the internationalisation of the courses offered, the mechanisms exist and could certainly be strengthened with the introduction of more demanding language certification in the future, while continuing efforts on the university's exchange grants to support student mobility. It will also be interesting to build a strong International Office for the whole university.

### **Internationalisation at home as a driver for excellence**

As part of its internal internationalisation policy, HUST has worked on elaborating programmes taught in English (15 today) and joint international programmes (7 today). HUST relies on several international programmes of excellence to develop its own. For example, HUST is strengthening and perfecting its existing international programme through the VIETNAM EXCELLENCE ENGINEERING PROGRAM (PFIEV), with the aim of training engineers of international quality. The PFIEV engineering degree is periodically accredited and recognized as meeting international standards for 4 consecutive cycles by the *Commission des Titres d'Ingénieur* (CTI), most recently for the 2022-2028 cycle.

Of particular note is the establishment of a collaboration programme with the UK (and Commonwealth countries). HUST has defined three priority programmes: food, biotechnology and energy, to develop training of excellence through exchanges and double degrees. An extension to other programmes is currently under consideration. The development of course in English shall be further enhanced by improving reception conditions, by increasing the number of English-speaking staff and inviting foreign lecturers to give courses in English.

Other courses are also available in French. For example, French-language engineering courses are developed with the cooperation and support of the Agence Universitaire de la Francophonie (AUF).

## **Standard 15: The institution analyses the attractiveness, performance and relevance of its educational offer and promotes student success from orientation to professional integration.**

### **A nationwide recruitment pool looking to attract the best high school graduates**

HUST is looking for very good students who are particularly agile when it comes to new technologies. 70% of HUST students come from rural areas, with a selection process that aim to retain the best baccalaureate graduates from each region. Vietnam is characterised by its strong linguistic and cultural diversity. To facilitate the social integration of first-year students, HUST pays special attention to them, with, for example, reserved places in the dormitories and psychological support.

### **HUST publicizes its offer toward student and its stakeholders**

While HUST has multiple channels for communicating its academic offer, such as the website and social networks, the committee points out that there are rooms for improvement regarding the visibility of English-language courses on the website, which is currently underdeveloped in terms of course content. The admission office, Academic Affairs Office, Communication and Branding Office are in charge of analysing data collected through admission campaigns, be online (website, online counselling, social networks etc...) or offline (ie. open days). The online university administration system (eHUST) includes D-Office, in which all staff and students have access to accounts with web versions and app. Thus, significant efforts have been made to provide students and teachers with information on study programmes and all operational aspects of teaching as part of the

school's digital transformation strategy, but efforts must be made regarding the accessibility of these information to non-Vietnamese speaking international students.

### **Improving curricula, taking into account the needs of companies and students to be strengthened**

HUST currently offers a particularly wide range of courses in numerous engineering fields, tailored to the needs of the socio-economic world. The transformation from a 6 years model to 4 + 1,5 years, with two distinct paths, the integrated Bachelor-Master programmes more research oriented, and the Bachelor-Engineer path, more professionally oriented was also an example to improve the attractiveness of the offer and the undergraduate-postgraduate continuum. Key programme performance indicators such as admission rates, success rates and employability shall be regularly monitored, together with qualitative data from student surveys and annual employer surveys to streamline courses offer, especially in those programmes that have very few students. This is particularly key for postgraduates programmes that currently attracts less students. New needs for skills and transdisciplinary knowledge may arise from industry, which should be taken into account when adapting or grouping courses.

### **Internships and strong links with companies as a key asset for the professionalisation of programmes**

One of HUST's strengths is the excellent integration of students into the job market, which also happen to be a factor in the lack of attractiveness of postgraduate programmes. The integration of students into the socio-economic world is partly based on internships. Student orientation is achieved through numerous job orientation activities and conferences inviting manufacturers to establish direct contact between the industry and students. Alumni are also regularly called upon to welcome students on internships, offer practical courses on their experiences as manufacturers, and participate in the orientation and recruitment of students.

### **In the third cycle, a balance between teaching duty and research shall be find**

PhD students are expected to join HUST as lecturers and researchers. The work on their theses is regularly monitored through progress reports and interviews. It should be noted that most of them are required to give lectures during their doctorate, which trains them to teach later in their careers. Particular attention should be paid to the supervision and limitation of their teaching hours, to ensure that a sufficient part of their time is devoted to research. In addition, some PhDs take additional training courses, but it seems that no cross-disciplinary training (open-science, pedagogy, popularization, languages, project management) is compulsory for them.

**Standard 16: The institution monitors the development of its programme offering and ensures that it is sustainable, by relying on a human resources policy consistent with its teaching policy and by implementing a continuous improvement approach.**

### **Recruiting lecturers and highly qualified foreign scholars is a critical issue.**

It appears from the SER that while the number of students has increased since 2017, the number of academic staff has slightly declined, from 1168 lecturers in 2017 to 1078 in 2022. HUST human resources policy shall urgently take into account the increase in student numbers, while maintaining a high quality of teaching. The budget for staff development has also fluctuated from year to year, rising to VND 589 million in 2022. At a time when the gap between students' and teachers' expectations regarding educational innovation is widening, speeding up the modernisation of teaching methods shall be a priority, through a dedicated training policy for lecturers. A similar conclusion was reached in the interviews regarding the provision of language training for lecturers. HUST is aware of the necessity to recruit highly qualified foreign scholars, but the results are so far limited. Aware of its insufficient capability to attract international lecturers, HUST has issued the Scheme to Attract Foreign Experts and Scholars for the period 2022-2026 with incentives to increase the number of foreign experts and has issued a Scheme for Long-Term Recruitment of Excellent International Lecturers.

### **Regular evaluations of the academic offer is organized but results shall be further assessed and course content updated**

HUST has set up evaluations for each course. The interviews clarified the mode of evaluation, which is based on two-level digital tools. At the end of each course, the faculties conduct surveys in the form of questionnaires. Surveys are analysed by the "Examination and Quality Assurance" department, which passes on its analysis to the teaching staff and the training council. The response rate is not known. A second survey is carried out at the overall level of each programme by the university department. Analyses and corrective actions are monitored by HUST, which, according to interviews with staff, accounts for 10-20% of course content. HUST takes a keen interest in monitoring course improvements. Indeed, this point was confirmed in interviews, as lecturers' salaries are partly indexed to these results. The overall quality of the programmes is also appreciated by the socio-

economic world through surveys. Companies that have taken on trainees or employed students from the university are asked about the level of their graduates or students.

Guidelines are set from the boards, and the departments implement them. HUST has set up a Quality Office to reinforce the implementation of the entire process. It analyses the attractiveness, performance and relevance of its training offer. Training management and evaluation systems, involving students, are used to continuously improve the range of courses on offer. This monitoring and modernization plan is not without its difficulties for HUST. Firstly, some disciplines have greater needs, with a need for innovation in digital technology. The update of course content shall be then addressed as a priority. The credit-based training system needs to be perfected to encourage modular and cross-disciplinary teaching, and the administrative side of training needs to be modernized, with better synchronization between the various departments. It is also important to promote access to information to improve the visibility of the academic offer.

**In conclusion, HUST academic offer covers most industrial sectors. The duration of studies, which used to last 6 years, has evolved positively, with a Bachelor's cycle that now lasts 4 years and a Master's cycle of 1.5-year. This offer is also consistent with the needs of the local socio-economic world, the recruitment market and the training needs of the country's researchers and lecturers. There is a significant decrease in the number of PhD students since 2017. The development of digital technology and the aim of introducing more research at Master's level with the participation of industry is a good tool for developing PhDs, but the number of master's students is growing slowly, at less than 100.**

**The university relies on several international programmes of excellence to develop its international programmes. One area for improvement concerns the visibility of English-language courses on the website, which is currently underdeveloped in terms of course content. On the international front, it will also be important to improve reception conditions, by increasing the number of English-speaking staff and inviting foreign lecturers to give courses in English.**

**PhD students are intended to join HUST as lecturers and researchers. It should be noted that most of them are required to teach during their PhD, which trains them to teach later in their career. Particular attention needs to be paid to supervising and limiting their teaching hours to ensure that they allow sufficient time for research practice. In addition, some PhD students take additional training courses, but it seems that no cross-disciplinary training (open science, pedagogy, popularization, languages, project management) is compulsory for them.**

**Standard 17: The institution supports the development of student and campus life, student engagement in governance, and promotes student well-being.**

### **An urgent need to improve the support to students and the well-being for students living in residences**

Students have a close bond with staff and teachers. Students are proud to be at HUST, and staff are deeply involved in student well-being and success. This is particularly evident in the merit-based scholarship programme to support students, in the number of student clubs and associations, and in the size of the student affairs office.

Yet, apart from scholarships and a plan to help student access sport facilities, there is no clear student life plan. Student life is mainly overseen by the Youth Union and staff, with no formal student commission to deal with activities and issues. There are few example of partnerships with local authorities such as Hai Ba Trung District and the city of Hanoi for organising cultural and sports activities for students, but the committee invites HUST to continue developing structuring long-term partnerships with local stakeholders to offer services to student and promote the access to culture and sport. During the interviews, the committee was impressed by the liveliness and acuity of the student representatives, but at the same time it became apparent that there is a multitude of means of communication, not always in English, which could usefully be improved for the internationalization of courses. This point deserves to be significantly improved in order to develop international courses.

University regulations provide for the election of one student per faculty to represent the students, who in turn elect a student to represent them on the Academic Council. All programmes have student representatives.

An annual session, facilitates dialogue between staff and students to obtain comprehensive feedback. HUST places great importance on student input, which fosters a spirit of closeness between faculty and students. In particular, professors have an open office policy, welcoming everyday students for discussion and support.

Students benefit from a favourable working environment in the library, including access to extensive documentation, wide opening hours and access to self-service computer rooms with a large number of workstations.

The Student Affairs department was established in 2008 (previously the Political and Student Affairs office) and transformed into the department of Student Affairs by 2023 along with the project to change the structure of HUST. In addition, to help new students adapt to university regulations and organisation, a welcome week is organized every year. Student's integration includes a civic and military education component carried out in the campus. Alumni are also invited to share their experiences with students at faculty seminars. Special attention should be paid to international students on arrival, so that they receive an extensive introduction to the University (tour, English guide book).

In addition, the administration and student associations jointly manage social networking groups. Financial support for student associations is provided by alumni. In addition, the Youth Union plays a crucial role in setting priorities and overseeing these initiatives. They meet regularly to address student life issues and manage ongoing projects. An office is dedicated to these activities.

On the other hand, although they receive a great deal of support, there is no official plan to help students participate in these activities by offering them personalized study plans.

A health centre has been set up and developed, including premises with a doctor and several permanent medical staff on site. Students can receive initial health care on the university site and have free access to medicines.

A plan to modernize student residences is in place, but the university needs to pay particular attention to continuing its investment in modernizing premises and student care.

**In conclusion, the expert committee considers that, despite the absence of dedicated student offices adapted to student life, and despite Vietnamese law which grants little place to student representatives in the university's official, student life is nonetheless optimally developed. It is clear to the expert committee that staff and faculty are equally convinced of its importance. Communication between the university and its students needs to be improved, both in terms of courses and services, and above all by encouraging the use of English for staff and teachers to help international students.**

**The quality of dormitory life needs to be improved by investing in the construction and refurbishment of existing student houses.**

**The organisation of student life will need to be rethought as HUST develops its second campus. Staff and teachers will have to prove that, with new premises and with numerous students, the organisation of student life on two campuses will remain a priority.**

## VI. CONCLUSION

Hanoi University of Science and Technology (HUST) has undergone a significant transformation since 2017, positioning itself as a key driver of modernization and professionalisation of high-level human resources in Vietnam. The institution strategic focus extends globally, aiming to diversify partnerships and align with international standards. Despite persistent weaknesses, HUST proactively addresses challenges, emphasizing restructuring, internationalization, and English language proficiency. The goal of achieving State University status by 2030 underscores its commitment to long-term development.

Regulatory frameworks govern HUST's roles and missions. The institution proactive approach involves creating a robust network, fostering collaborations with local partners, national universities, and international alliances. Research priorities, including four key areas, highlight the link between research and training, albeit challenges persist, especially concerning doctoral students.

The search for financial feasibility and strategic planning characterize HUST's resilience, despite constraints in revenue diversification and stringent regulations. The support policy, though significant, requires improvement, particularly for doctoral students' recruitment. Challenges to support laboratories, a deficit in industrial collaboration, and the need for a genuine innovation ecosystem are highlighted. Strengthening communication mechanisms and outreach events are deemed essential.

The institution's research focus is underscored by the definition of four priority research areas. Significantly, HUST has forged strong links between research and training, with research institutes actively participating in training programs. While the ambition to ascend to the status of a competitive research university on the international stage is acknowledged, HUST is realistic about the current challenges. The institution has not yet attained research university status, as it is diligently working towards meeting the requisite criteria, including the enhancement of facilities, recruitment of high-calibre researchers, cultivation of graduate student talent, and increasing publications.

The involvement of BK Holding and the alumni network is crucial for industrial collaboration, continuous education, and innovation. Quality procedures to enhance research production and a results-based incentive mechanism are proposed. HUST's diploma coverage across sectors has evolved positively, with an increased focus on international training programs. However, challenges in website visibility, reception conditions, and English-language courses are noted.

PhD student development as lecturers and researchers is acknowledged, yet attention is required to balance teaching and research commitments. The absence of compulsory cross-disciplinary training for PhD students is highlighted. Despite lacking dedicated student offices, student life is considered well-developed, urging improved communication and dormitory facilities. As HUST expands to a second campus, the organisation of student life and communication between staff and students will be pivotal.

### Strengths

- Clear strategy and clear trajectory at local, national and international level
- Launch of an ambitious international policy to get closer to international standards
- Definition of four priority scientific areas in line with the needs of the government and industrial ecosystem; even if, maintaining other subjects remains important.
- Performance in research production; support programme for research development (funding of projects and scholarships)
- An efficient innovation ecosystem of academic, socio-economic and industrial partners for the promotion, valorisation, and transfer of its research with strong support from the government. This ecosystem is also supported by a dynamic and efficient network of Alumni
- Strong links between teaching, learning, and research, with early initiation to research at undergraduate level
- Convincing education policy, well adapted to Vietnam's strategic positioning and labour market
- Dynamic student life and support policy for students from rural areas
- Significant effort to promote the university's brand and attractiveness
- Strong commitment to diversifying its own resources

## Weaknesses

- Precarious laboratories size (only one permanent researcher with a team of students)
- Insufficient valorisation of research production and too few income from scientific and technological transfer activities, partly due to binding national regulation
- Lack of research quality procedures. Training in research integrity and ethics not generalized.
- Lack of support and grants for research students (master and PhD); too few PhD students
- Lack of a global policy of educational transition and sustainable development
- Lack of internationalisation and attractiveness for international lecturers and students, as well as insufficient English language skills among academic and administrative staff.
- Insufficient financial sustainability. In particular, lack of visibility on the financing of property projects
- Little direct and two-way communication between students and their representative, and absence of representation of the body of doctoral students.
- Staff professionalisation
- Need to reinforce the retention strategy for faculty members
- Absence of partnerships with local authorities in student life and inadequate infrastructures and facilities investments for a competitive research university (in particular still low quality of dormitories)
- Low student representation on institutional councils and need to clarify the reporting process

## Recommendations to the institution

- Strengthen the **international policy** to i) encourage staff and student mobility ii) develop intercultural and language skills of academic and administrative staff iii) continue current efforts to internationalise curricula and research practices
- Develop a policy to **strengthen the Masters-PhD continuum** with the aim of enhancing academic excellence and international attractiveness (ie. graduate-level programmes/courses based on HUST priority research themes). This policy could rely on HUST key academic and research partners
- Develop a stronger **research valorisation strategy** and maintain a scientific policy encouraging the emergence of new and disruptive themes required to keep and develop a robust innovation dynamic. In particular, develop BK Holding's capabilities to be a solid institution of the HUST's eco-system".
- Finalize **the restructuring of research units** to i) strengthen the scientific signature ii) achieve a critical size for laboratories, with a minimum core of teacher-researchers, dedicated technicians, and engineers, alongside engaged students, in order to ensure laboratories resilience and viability
- Develop a **quality assurance process encompassing both academic and research** activities (essential for statistical insights, enabling improvements across departments, research centres, institutes, and laboratories)
- Continue to develop strategies to **increase the attractiveness of recruiting Master and PhD students**, coupled with a dedicated budget to provide higher funding and salaries for PhD students, which is essential to attract and retain high-end talent, and ensure the efficient operation of laboratories
- Develop **cross-disciplinary teaching on scientific integrity and ethics** for PhD (such as open science, pedagogy, popularization, languages, project management. Particular attention should be paid to the supervision and limitation of their teaching hours, to ensure that a sufficient proportion of their time is devoted to research
- Anticipate the **impact of increasing student numbers** and teaching staff on all pedagogical processes, in order to maintain the excellence of courses and teaching staff. This is particularly commendable in view of the opening of a **second campus**, in which the distribution of academic and research activities, as well as the organisation of student life must be carefully planned.
- Define a **global policy of educational transition and sustainable development**
- Continue to work on the **financial feasibility and multi-annual investment** management and to support **significant investments for infrastructure**, especially i) facilities in laboratories in order to maintain and improve attractiveness and research capacities ii) student premises and student reception facilities to modernize them and get closer to international standards

## VII. COMMENTS OF THE INSTITUTION



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

Assoc. Prof. HUYNH Quyet Thang  
President  
Hanoi University of Science and Technology

Stéphane Le Bouler  
Acting President  
HCERES

Hanoi, March 7, 2024

Dear Mr. Stéphane Le Bouler,

I would like to sincerely thank the expert panel for their dedication and effort in creating the preliminary evaluation report on behalf of the leadership of Hanoi University of Science and Technology. Within a relatively short period, the panel has efficiently identified the strengths, opportunities, and challenges facing our university in the foreseeable future. Particularly noteworthy are the insightful recommendations provided by the expert panel, which we believe hold significant value for us, especially as we navigate through the restructuring process following the approval of the Prime Minister's Decision No. 1512/QĐ-TTg.

Furthermore, as Hanoi University of Science and Technology endeavours to align itself with the resolution outlined in Government Resolution No. 14/NQ-CP and submitted to the Ministry of Education and Training, we are in the process of developing the "Project for the Development of Hanoi University of Science and Technology as a Leading Higher Education Institution in Asia". This initiative provides us with a more transparent, long-term perspective on the direction of our university's development, particularly during the pivotal 2025 - 2030 period.

In addition to our gratitude, we provide supplementary information on certain aspects analyzed in the report to elucidate further the issues discussed. Providing additional context will contribute to a more comprehensive understanding of our university's current situation and future prospects.

Once again, I extend my heartfelt gratitude to the expert panel for their valuable insights and recommendations. We look forward to the opportunity to collaborate further and to continue our journey towards academic excellence.

### II. EVALUATION REPORT

#### FIELD 1: STRATEGIC AND OPERATIONAL MANAGEMENT

Standard 3: The institution is involved in its environment and develops a partnership policy as part of its strategy.

A significant opening towards socio-economic and cultural partnerships and territorial integration

"HUST includes a member unit « Bach Khoa Hanoi Technology Investment and Development One Member Company Limited » called BK-Holdings, which was implemented ten years ago" (Page 8)

Proposed Revision: "HUST includes a member unit « Bach Khoa Hanoi Technology Investment and Development One Member Company Limited » called BK-Holdings, which was implemented fourteen years ago »





Standard 7: The human resources policy and the development of social dialogue reflect the institution's strategy and contribute to its staff's quality of life at work.

“Since 2017, HUST has also worked on promoting internationalization through a new programme but with modest results till now (in 2021 the newly implemented Excellence Lecturer Recruitment Programme recruited 5 staff members)”. (page 12)

Review requested for this statement.

Reason: The recruitment of 5 faculty members was part of a project aimed at attracting outstanding researchers both domestically and internationally to work at HUST, thus fostering research excellence, and not primarily aimed at promoting internationalisation.

### **FIELD 3: EDUCATION, STUDENT AND CAMPUS LIFE POLICY**

“There is no direct link between alumni and student representatives, nor regular councils for programme improvement gathering teaching staff, professionals and student representatives.” (page 23)

Proposed Revision: The University Council has many business representatives who are also alumni. The Department of Student Affairs coordinates with the Alumni Office to organize many activities to connect Alumni and students.

Reason: There is a direct link between alumni and student representatives and regular councils for programme improvement, available at <https://www.facebook.com/photo?fbid=741569638008622&set=a.550682147097373>

“Student’s integration includes a civic and military education component carried out on the second campus” (page 23)

Proposed Revision: HUST has a civic and military education component in campus, not in the second campus.

Reason: HUST has not yet to have the second campus.

## **VI. CONCLUSION**

### **Weaknesses**

“Lack of retention strategy for faculty members” (page 26)

Review requested for this statement.

Reason for Reconsideration: Hanoi University of Science and Technology (HUST) has implemented innovative management practices and revised its salary structure for faculty members to attract and retain talented individuals. Furthermore, the university has fostered an optimal working environment and developed a strategic training programme to enhance all faculty members' professional skills and expertise. HUST has recently introduced the HUST Care insurance scheme for all staff members.

Accurate data substantiates these efforts. Over the past three years, HUST has successfully recruited over ten faculty members from other universities, in addition to regular annual recruitment drives.

We believe these initiatives demonstrate HUST's commitment to retaining faculty members and fostering a conducive work environment, which may warrant a reassessment of the initial assertion regarding the lack of a retention strategy.







**Recommendations to the institution**

“For instance, HUST could consider developing graduate schools, modelled after international practices for efficient management and support of graduate students, overseeing selection, progress, and post-defence follow-up.” (page 26).

Review requested for this statement.

Reason for Reconsideration : The organizational model of Hanoi University of Science and Technology (HUST) is that of a comprehensive university, which includes many schools within specific academic fields. Each school takes responsibility for organizing and managing graduate education and research for its respective discipline. Before 2018, HUST had already implemented a model of graduate schools, which had both advantages and disadvantages.

“... develop BK holding’s capabilities to bring contracts to the laboratories”.

Proposed Revision: “... develop BK Holding’s capabilities to be a solid institution of the HUST’s eco-system”.

Reason: The BK Holdings model does not primarily serve to bring contracts to the university but acts as a catalyst for innovation and creativity. Its crucial role lies in fostering innovation and serving as a bridge to transfer research results from the university into commercial products. The function of bringing contracts to the laboratories has already been decentralized to the academic schools and research institutes.

In general, the information from the expert panel’s preliminary assessment report has been invaluable to us. Beyond our desire to obtain accreditation from HCERES, the evaluations, particularly the recommendations provided by the expert panel, have equipped us with crucial insights to successfully achieve our outlined objectives. We eagerly anticipate receiving further recommendations to effectively execute the "Project for the Development of Hanoi University of Science and Technology as a Leading Higher Education Institution in Asia" that we are currently drafting for submission to the Ministry of Education and Training.

Yours sincerely,



HUYNH Quyet Thang  
President  
Hanoi University of Science and Technology



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International evaluation and accreditation

## ACCREDITATION DECISION

Hanoi University of Science and Technology

Hanoi

Vietnam

**April 2024**

## SCOPE OF THE ACCREDITATION GRANTED BY HCERES

HCÉRES has based its evaluation process on a set of objectives that higher education institutions must pursue to ensure recognised quality within France and Europe. These objectives are divided up into three fields among which are the accreditation criteria.

The Accreditation Commission issues an opinion about the accreditation of the institution after examining the file. The Hcéres President takes the decision based on the Commission's opinion and the final evaluation report of the institution. This accreditation decision, taken in plenary session, is the result of a collegial and reasoned process.

The decision issued by Hcéres regarding the accreditation of the institution corresponds to the awarding of a label to the evaluated entity.

This decision is independent of the accreditations carried out by the French State and therefore does not entail recognition in France of the institution or the diplomas delivered by it.

## **Decision n° EI-2024-15 on the accreditation of the Hanoi University of Science and Technology -Vietnam.**

### **The President of the High Council for the Evaluation of Research and Higher Education,**

Considering the Research Code, in particular Articles L. 114-3-1 to L. 114-3-6;

Considering the Decree No. 2021-1536 of November 29<sup>th</sup> 2021 on the organisation and operation of the High Council for the Evaluation of Research and Higher Education;

Considering the Board's deliberation of September 29<sup>th</sup> 2022 on the accreditation criteria for foreign higher education institutions;

Considering the Decision No. 2023-9 of March 16<sup>th</sup> 2023 on the international accreditation procedure of the High Council for the Evaluation of Research and Higher Education;

Considering the agreement No. 2023/06/15 - for the evaluation/accreditation of Hanoi University of Science and Technology;

Considering the opinion issued by the Accreditation Commission on March 27<sup>th</sup> 2024,

### **Decides:**

#### **Article 1**

Noting that Hanoi University of Science and Technology meets the six accreditation criteria, voted by the Board of the High Council on September 29<sup>th</sup> 2022, as follows:

### **FIELD 1: STRATEGIC AND OPERATIONAL MANAGEMENT**

#### **ACCREDITATION CRITERION 1 - DEFINING THE INSTITUTION'S STRATEGY**

Hanoi University of Science and Technology (HUST) has demonstrated a resolute commitment to its strong and well-defined strategy, positioning itself as a crucial catalyst for the modernization and professionalisation of high-level human resources in Vietnam. The period since 2017 has witnessed an impressive transformation, with HUST diligently addressing recommendations from previous peer-review evaluations and making notable strides in organisational improvement.

HUST's proactive approach extends beyond its campus, with the establishment of a robust network. This network includes strong ties with local industrial partners, collaboration with regional and national universities (such as G7 and PFIEV), and fruitful international partnerships. These collaborations are instrumental in fostering collaborative research initiatives and facilitating the publication of high-quality international research.

While acknowledging its persistent weaknesses, HUST remains proactive in tackling them head-on. Priorities include finalizing the restructuring of research units to strengthen its scientific signature, intensifying efforts in internationalisation to attract both lecturers and students, and placing a heightened emphasis on enhancing English language proficiency among students, teachers, and researchers. Concurrently, there is a focus on increasing revenue from scientific and technological transfer activities, alongside the promotion of a robust innovation and transfer ecosystem.

Becoming a comprehensive university in 2022 (autonomy step 2) and then a State University in 2030 will give more possibilities to carry out these objectives. As it progresses along this path, HUST remains ready to make even more significant contributions to the educational, scientific and technological landscape of Vietnam and beyond.

HUST is also committed to sustainable development policies. Defining a global policy of educational transition and sustainable development will undoubtedly help the institution measuring and improving the socio-economic and environmental impact of its activities.

## ACCREDITATION CRITERION 2 - GOVERNANCE AND ARRANGEMENTS FOR IMPLEMENTING THE STRATEGY

A well-defined and comprehensive strategic plan serves as the backbone of HUST's commitment to excellence. This plan encompasses clearly outlined objectives, an operational action plan, and an annual assessment that actively involves the entire academic and administrative community. Notably, the institution has set a visionary goal to attain State University status by 2030, showcasing its dedication to long-term development.

Challenges persist, particularly in the realm of doctoral candidates. The national context, coupled with unattractive scholarships for doctoral candidates and the prevalent issue of brain drain due to high tuition fees and a lack of scholarships, poses a significant hurdle. Many doctoral students find themselves compelled to work in companies due to the absence of scholarships.

Despite these challenges, HUST has demonstrated resilience since 2017 by diligently exploring the financial feasibility of its strategic projects. However, the institution faces constraints in diversifying revenues and is bound by stringent state regulations. This awareness of limitations does not deter HUST's commitment to progress; rather, it underscores the need for strategic planning and resource optimization within the established regulatory framework.

## FIELD 2: POLICY ON RESEARCH, INNOVATION AND THE INCLUSION OF SCIENCE IN SOCIETY

### ACCREDITATION CRITERION 3 - RESEARCH POLICY

HUST has launched strategic initiatives since 2017, aiming to elevate its research and innovation landscape and achieve its medium-term goal of becoming a research university. Despite notable achievements and top-tier rankings (regionally and nationally), the institution faces challenges, including a shrinking workforce and limited funding from transfers and valorisation. HUST's significant strengths include robust national and international collaborations, state-of-the-art facilities, and a dynamic valorisation ecosystem, involving start-up creation. It is essential to emphasize HUST's commitment to fostering research, innovation, and collaborative projects, along with its focus on aligning research with industry needs. This positions HUST as a central player in Vietnam's academic and technological landscape.

The currently deployed support policy is significant, taking into account the 2017 recommendations, but still proves insufficient and requires further improvement, especially regarding the recruitment of PhD students, which is becoming increasingly challenging. This situation, influenced by numerous factors (strong attractiveness of companies, insufficient scholarships, excessively high tuition fees, etc.), is critical and weakens the development of academic research. Indeed, the functioning of research relies predominantly on laboratories whose driving force consists of master's and doctoral students.

Although the number of publications has increased, this growth is primarily based on the contribution of undergraduates and master's students, leaving doctoral candidates in the shadows.

The early initiation into research at the undergraduate level is very interesting and important, but the implementation of the strategy in laboratories poses a problem. Teams in laboratories seem to have difficulty appropriating the challenges of the four identified priority areas, hampering the coherence and effectiveness of research efforts. Moreover, only 12 laboratories are mostly involved in these four areas. The other 32 laboratories must secure additional funding. It is important to reinforce the communication about this strategy and to show that non-priority areas remain important and must develop on their own even if they do not benefit from the same financial support.

### ACCREDITATION CRITERION 4 - INNOVATION POLICY AND SOCIETAL IMPACT

HUST has been able to create a robust innovation and transfer ecosystem and has implemented the means and initiatives to establish strong and lasting collaborations with both national and international companies. These initiatives are strongly supported by the companies BK Holdings, BK Fund and the Start-up Fund, as well as by the growing involvement of the alumni network. HUST's investment in infrastructure and testing facilities, particularly in the 44 laboratories, plays a central role in facilitating research and development. However, it is crucial to address the mediation deficit, highlighting the need to strengthen communication mechanisms and awareness events to promote and increase the visibility

of HUST. BK Holding's involvement in the management of industrial contracts is a strategic step that promotes synergies between academia and industry.

Continuing education and a smooth transition between secondary and university education are essential for skills development and a sustainable flow of human resources to HUST and the laboratories. HUST has been able to implement support and reward mechanisms for researchers and students who produce quality research and both scientific and industrial valorisation. It is important to emphasise that the valorisation eco-system provides assistance, advice, training, and financial support to researchers and students who want to create their start-ups. Nevertheless, the implementation of quality procedures for research will be essential to significantly improve research management and production at HUST. It is also important to further develop the policy of financial incentives for researchers and students involved in research and valorisation activities.

## FIELD 3: EDUCATION, STUDENT AND CAMPUS LIFE POLICY

### ACCREDITATION CRITERION 5 - TEACHING POLICY

HUST academic offer covers most industrial sectors. The duration of studies, which used to last 6 years, has evolved positively, with a Bachelor's cycle that now lasts 4 years and a Master's cycle of 1.5-year. This offer is also consistent with the needs of the local socio-economic world, the recruitment market and the training needs of the country's researchers and lecturers. There is a significant decrease in the number of PhD students since 2017. The development of digital technology and the aim of introducing more research at Master's level with the participation of industry is a good tool for developing PhDs, but the number of master's students is growing slowly, at less than 100.

The university relies on several international programmes of excellence to develop its international programmes. One area for improvement concerns the visibility of English-language courses on the website, which is currently underdeveloped in terms of course content. On the international front, it will also be important to improve reception conditions, by increasing the number of English-speaking staff and inviting foreign lecturers to give courses in English.

PhD students are intended to join HUST as lecturers and researchers. It should be noted that most of them are required to teach during their PhD, which trains them to teach later in their career. Particular attention needs to be paid to supervising and limiting their teaching hours to ensure that they allow sufficient time for research practice. In addition, some PhD students take additional training courses, but it seems that no cross-disciplinary training (open science, pedagogy, popularization, languages, project management) is compulsory for them.

### ACCREDITATION CRITERION 6 - STUDENT AND CAMPUS LIFE

The expert committee considers that, despite the absence of dedicated student offices adapted to student life, and despite Vietnamese law which grants little place to student representatives in the university's official, student life is nonetheless optimally developed. It is clear to the expert committee that staff and faculty are equally convinced of its importance. Communication between the university and its students needs to be improved, both in terms of courses and services, and above all by encouraging the use of English for staff and teachers to help international students.

The quality of dormitory life needs to be improved by investing in the construction and refurbishment of existing student houses.

The organisation of student life will need to be rethought as HUST develops its second campus. Staff and teachers will have to prove that, with new premises and with numerous students, the organisation of student life on two campuses will remain a priority.

## Article 2

Hanoi University of Science and Technology is fully accredited for a period of five years.

### Article 3

The decision is accompanied by the following recommendations and comments:

Strengthen the **international policy** to i) encourage staff and student mobility ii) develop intercultural and language skills of academic and administrative staff iii) continue current efforts to internationalise curricula and research practices

Develop a policy to **strengthen the Masters-PhD continuum** with the aim of enhancing academic excellence and international attractiveness (ie. graduate-level programmes/courses based on HUST priority research themes). This policy could rely on HUST key academic and research partners

Develop a stronger **research valorisation strategy** and maintain a scientific policy encouraging the emergence of new and disruptive themes required to keep and develop a robust innovation dynamic. In particular, develop BK Holding's capabilities to be a solid institution of the HUST's eco-system".

Finalize **the restructuring of research units** to i) strengthen the scientific signature ii) achieve a critical size for laboratories, with a minimum core of teacher-researchers, dedicated technicians, and engineers, alongside engaged students, in order to ensure laboratories resilience and viability

Develop a **quality assurance process encompassing both academic and research** activities (essential for statistical insights, enabling improvements across departments, research centres, institutes, and laboratories)

Continue to develop strategies to **increase the attractiveness of recruiting Master and PhD students**, coupled with a dedicated budget to provide higher funding and salaries for PhD students, which is essential to attract and retain high-end talent, and ensure the efficient operation of laboratories

Develop **cross-disciplinary teaching on scientific integrity and ethics** for PhD (such as open science, pedagogy, popularization, languages, project management. Particular attention should be paid to the supervision and limitation of their teaching hours, to ensure that a sufficient proportion of their time is devoted to research

Anticipate the **impact of increasing student numbers** and teaching staff on all pedagogical processes, in order to maintain the excellence of courses and teaching staff. This is particularly commendable in view of the opening of a **second campus**, in which the distribution of academic and research activities, as well as the organisation of student life must be carefully planned.

Define a **global policy of educational transition and sustainable development**

Continue to work on the **financial feasibility and multi-annual investment** management and to support **significant investments for infrastructure**, especially i) facilities in laboratories in order to maintain and improve attractiveness and research capacities ii) student premises and student reception facilities to modernize them and get closer to international standards

### Article 4

This decision will be published on the Hcéres website.

Paris, April 10<sup>th</sup> 2024

The acting President  
signed  
Stéphane Le Bouler





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