FACULTY OF ENVIRONMENT AND NATURAL RESOURCES

AUN-QA
SELF - ASSESSMENT REPORT

ENVIRONMENTAL ENGINEERING

2022

AUN-QA SELF - ASSESSMENT REPORT
ENVIRONMENTAL ENGINEERING

We hereby confirm to approve this AUN-QA Self-Assessment Report of Environmental Engineering Program for assessment according to AUN-QA Criteria (V3.0).

Assoc. Prof. Dr. Nguyen Tri Quang Hung

Dean
Faculty of Environment and Natural Resources

Approved by

Acting President
Nong Lam University Ho Chi Minh City

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LIST OF ABBREVIATIONS

AAO	Academic Affairs Office
AIC	Applied Informatics Center
AUN	ASEAN University Network
CFS	Center for Foreign Studies
CTU	Can Tho University
DET	Department of Environmental Technology
EE	Environmental Engineering
Env.	Environmental
ET	Environmental Technology
FENR	Faculty of Environment and Natural Resources
GPA	Grade Point Average
HCMC	Ho Chi Minh City
HCMCUT	Ho Chi Minh City University of Technology
ISI	International Scientific Information
MOET	Ministry of Education and Training
MONRE	Ministry of Natural Resources and Environment
Nat.	Natural
NLU	Nong Lam University
PDCA	Plan Do Check Act
PLO	Program learning outcome
PO	Program objective
QA	Quality Assurance
QMO	Quality Management Office
Res.	Resources
SAR	Self-Assessment Report

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PART 1. INTRODUCTION

1.1. EXECUTIVE SUMMARY OF THE SAR

The Department of Environmental Technology (DET) of Nong Lam University (NLU) is responsible for educating-research-transfer technology at the level of the department. DET acts in compliance with NLU policy on Quality Assurance (QA) and determines that QA is one of the principal tasks to improve quality of education and training as well as meet stakeholders needs. In 2020, counseled by the Quality Management Office (QMO) of NLU, DET conducts a Self-Assessment Report (SAR) in alignment with assessment criteria of Guide to AUN-QA Assessment at Program Level Version 3.0 [Exh. 1.1.a].

DET conducted a bachelor's program in environmental engineering (EE) program in 2001 under the year-based system (04 years) [Exh. 1.1.b]. The program was adjusted to the credit system including only 143 credits from the academic year 2008. After ten years of implementation, this program is continuously revised and renovated based on the comparison with other national and international programs as well as feedback of stakeholders - employers, alumni, students, lecturers, and managers. The new 136-credit program in 2018 (then 158-credit in 2020) generates more time for teachers and learners to interact and do field practices, research, and internships. The published program outputs cover necessary qualifications environmental engineers need to meet the high demands of employers, current Vietnamese society, Startup and the Fourth Industrial Revolution.

Quality of learners is controlled not only from the input but also through the entire learning process based on learner-centered teaching methods; the learning process is evaluated based on 03 learning environments: inside classroom, outside classroom, and in society. EE always attaches special importance to soft skills, career skills, and professional ethics, which strengthens learners' abilities to adapt to working conditions after graduation. Criteria of graduation of EE are (i) Knowledge (General knowledge and Professional knowledge); (ii) Skills (General skill and Professional skill) and (iii) the Awareness and Attitudes. The quality of educators is asserted by a team of lecturers, technicians, professions acquiring extensive specialist knowledge and professional skills; most of them are educated and graduated from the prestigious international and domestic universities/ research institutes. The appropriate teaching time also helps the lectures enhance the teaching quality based on scientific research, technology transfer, and start-up.

Teaching and learning conditions of NLU such as classrooms, libraries, laboratories, and internships, etc. are improved in quantity and quality. Thanks to feedback of stakeholders, NLU has made impressive strides in improving transmission capacity and connectivity facilities for online education, standardizing student living conditions and student support services. Stakeholders' feedback is a decisive factor in revising the program accordingly such as (i) converting the compulsory specialized English to elective in-depth English: English for EE, (ii) standardizing condition of practice and internship; and (iii) fostering and expanding capacity of lecturers. Laboratories increasing in quality and quantity aims to "extend" the competing capacities of learners and "internationalize" the research environment for learners and teachers.

1.2. ORGANIZATION OF THE SELF-ASSESSMENT

How the self-assessment was carried out and who were involved?

- The self-assessment council consists of 23 members who are the representatives of the Presidential Board, Dean of the Faculty, and Head of the Divisions, lecturers and students in the period of 2021 – 2025 [Exh. 1.2.a]. Dean of the FENR, NLU was appointed to lead and supervise the self-assessment for the EE program. The taskforce teams consist of the Head of DET and some experienced lecturers, who were trained about AUN-QA criteria as well as through workshops conducted by NLU. Each team member was delegated to write one or two

criteria of the SAR relating to their working expertise while the Supporting Teams were responsible for collecting relevant evidence for each criterion.

- The Teams scheduled 4-hour-seminars every week for discussion, individual working as well as group working to find solutions to the arising issues. The SAR was prepared and revised several times by the taskforce teams before being feedback by stakeholders and then finally revised for official submission to AUN-QA.

The self-assessment report follows closely the guidelines of the AUN-QA version 3 which includes 11 criteria with 50 sub-criteria [Exh. 1.2.b]. The criteria reports are written in the following approach: 1) Clarify the criteria in detail; 2) Analyze, compare and evaluate current procedure in order to understand the strengths and the weaknesses of the program in accordance with criteria; 3) Develop the operational plans to promote strengths and improve the weaknesses; 4) After the reports are done, they are cross-checked within the groups and then between different groups in order to identify inconsistent or inappropriate or inadequate evidence; 5) The groups complete the criteria reports and send them to the secretariat who finally prepare the self-assessment report. 6) The secretariat submits the reports to the committee to get final comments; 7) the self-assessment report is also made publicly available in order to get comments from all other members of the university including staff, and students; 8) Based on the comments from the members of the university, members of the self-assessment council, the secretariat and special groups work together in order to finalize the self-assessment report; 9) the council approves the report and sends it to the Quality Management office, NLU.

Table 1. The responsibilities of each member of the SAR team in assessment analysis, collecting data and evidence

Criteria	Assigned to
1. Expected Learning Outcomes	Dr. Ngo Vy Thao
2. Program Specification	Dr. Ngo Vy Thao
3. Program Structure and Content	Dr. Ngo Vy Thao
4. Teaching and Learning Approach	MSc. Ngo Thi Minh The
5. Student Assessment	MSc. Huynh Tan Nhut
6. Academic Staff Quality	MSc. Nguyen Van Huy
7. Support Staff Quality	MSc. Nguyen Van Huy
8. Student Quality and Support	MSc. Ngo Thi Minh The
9. Facilities and Infrastructure	Assoc. Prof. Dr. Nguyen Tri Quang Hung
10. Quality Enhancement	MSc. Huynh Tan Nhut
11. Output	Dr. Nguyen Tri Quang Hung

The SAR team has 5 members (**Table 1**), and team members will do the assessment analysis, then exchange information and discuss with other members during group meetings to form the final document (**Table 2**). The SAR will be then finalized by the SAR team leader after discussing with all groups. The SAR then will be sent to Faculty members and QMO for reviewing and evaluating. The SAR will be modified based on the feedback and then will be sent to external experts to review and evaluate. From comments of the experts, the final version of SAR will be updated and submitted for AUN-QA assessment.

Table 2. The work plan for SAR team of FENR

Activity/month		1	2	3	4	5	6	7	8	9	Deadline	Assigned to
PLAN	Communicate Intent	x										Assoc. Prof. NTQ Hung
	Organize Team	x										Assoc. Prof. NTQ Hung
	Develop Plan	x										Assoc. Prof. NTQ Hung
	Understand AUN QA criteria and process	x										Team
DO	Self-assessment		x	x	x							SAR team
	Collect data & evidence		x	x	x							SAR team
	Close gaps				x							SAR team
	Write SAR		x	x	x							SAR Team
	Review SAR				x							Assoc. Prof. NTQ Hung, and academic board
CHECK	Verify SAR					x						Assoc. Prof. NTQ Hung
	Gather Feedback					x						QMO
ACT	Improve QA						x					Team
	Finalize SAR							x				Academic board
	Communicate SAR								x			Assoc. Prof. NTQ Hung
	Get Ready									x		SAR team
Change Management		x	x	x	x	x	x	x	x	x		Academic board

1.3. BRIEF DESCRIPTION OF THE UNIVERSITY

Nong Lam University – Ho Chi Minh City (NLU-HCM), located in HCMC, Vietnam, was founded in 1955 as College of Agriculture in B'Lao (Bao Loc City, Lam Dong Province today). Over the past 65 years of development, the University has had several times changing its name [Exh. 1.3.a].

NLU-HCMC is one of the oldest and most prestigious institutions in Vietnam, devoted to scientific researches, technology enhancements and training of the skilled workforce. From its agricultural background, NLU-HCMC has turned into a multi-disciplinary university with a diversified portfolio of graduate and postgraduate degrees since 2000s. NLU-HCMC is currently offering 61 undergraduate programs and 28 graduate programs covering a wide range of disciplines in

Fundamental Sciences, Agriculture, Technology and Economics and Development. Organizational structure of NLU is described in **Figure 1**.

Vision: NLU-HCMC will become a research university in accordance with international quality standards by 2035 [Exh. 1.3.b].

Mission: NLU-HCMC is a multi-disciplinary university committed to the training of highly skilled and creative professionals who can do research, developing and transferring knowledge and technological advances for the national and regional sustainable socio-economic development [Exh. 1.3.c].

Strategic objectives: NLU-HCMC is striving to be on par with prestigious universities in the region and the world in providing high-quality training, research, technology transfer and international cooperation [Exh. 1.3.c].

1.4. BRIEF DESCRIPTION OF THE FACULTY

The FENR was founded in 2009 by merging FENR (founded in 2001) with the Department of Horticulture & Landscaping (founded in 2002) and the Department of Applications of Geographic Information System (founded in 2006) [Exh. 1.4.a]. Currently, FENR has five Departments:

1. Department of Environmental Management
2. Department of Environmental Technology
3. Department of Horticulture & Landscaping
4. Department of Natural Resources & Geographic Information System
5. Department of Environmental Science

FENR has been responding to 06 majors of bachelor's degree up to 2020 as following:

1. Environmental Engineering (described in detail below)
2. Environmental Management
3. Environmental Science
4. Information System
5. Natural Resources and Ecotourism
6. Horticulture and Environmental Landscaping

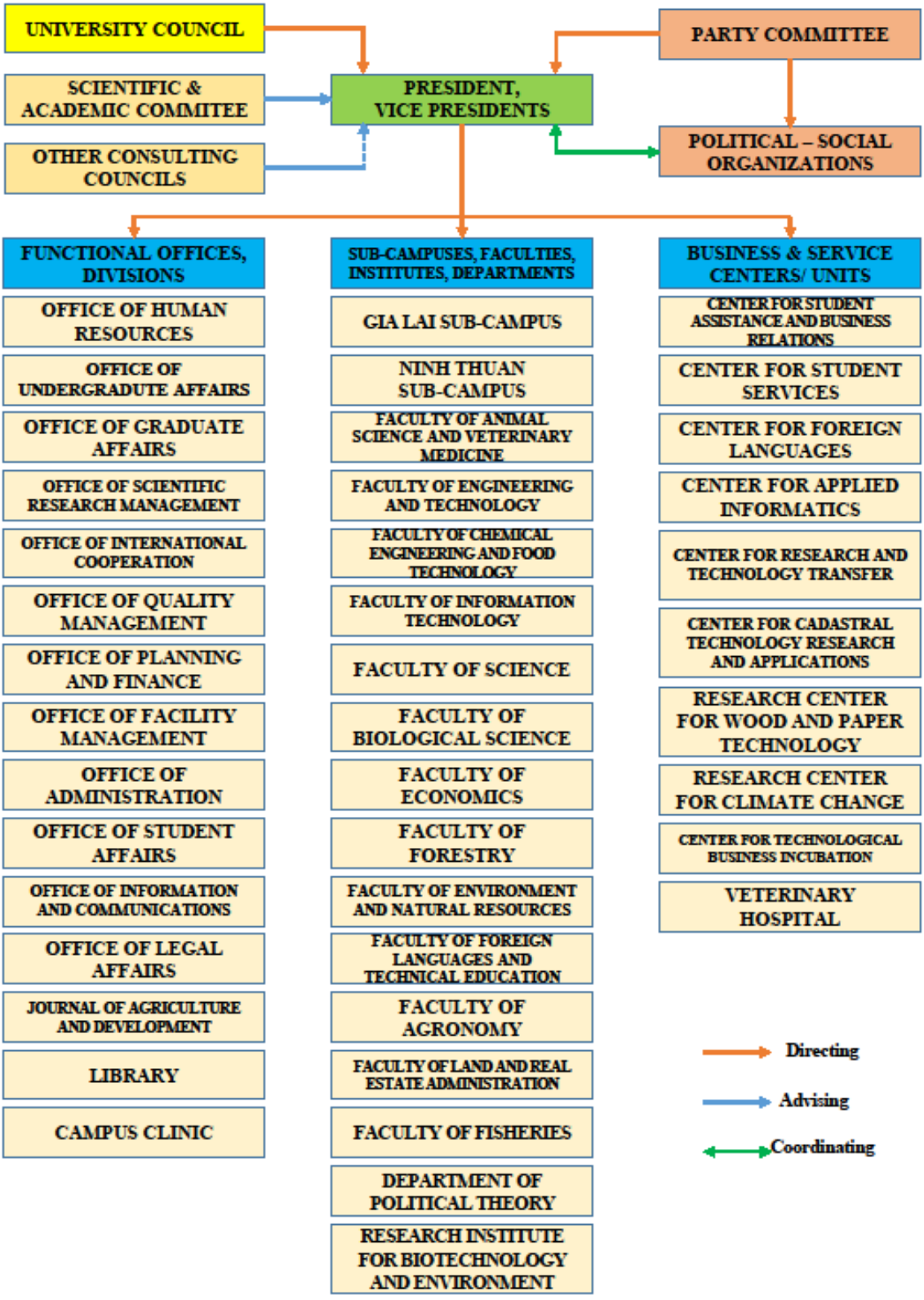


Figure 1. Organizational structure of NLU (as of April 2022).

PART 2. ASSESSMENT OF AUN-QA CRITERIA AT PROGRAM LEVEL

2.1. CRITERION 1- EXPECTED LEARNING OUTCOMES

2.1.1. The expected learning outcomes have been clearly formulated and aligned with the vision and mission of the university

In its recent strategic plan, Nong Lam University - Ho Chi Minh City has published their vision, mission and strategic objectives [Exh. 2.1.1.a] as follow:

Vision: NLU-HCMC will become a research university in accordance with international quality standards by 2035.

Mission: NLU-HCMC is a multi-disciplinary university committed to the training of highly skilled and creative professionals who can do research, developing and transferring knowledge and technological advances for the national and regional sustainable socio-economic development.

Strategic objectives: NLU-HCMC is striving to be on par with prestigious universities in the region and the world in providing high-quality training, research, technology transfer and international cooperation.

The EE program gives students basic knowledge about the transformation of matter in the environment, in-depth knowledge about the interactions between environmental components in nature and man-made ecosystems in order to apply that knowledge to establishing treatment systems for important pollutants (**Table 3**). Additionally, the program was designed to train learners with political and ethical qualities, with solid foundational and professional knowledge to meet the needs of job market.

Table 3. The conformity of training objectives of the EE program [Core Exh. 9.a] with the vision and mission of NLU-HCMC.

Vision, mission of NLU-HCMC	Program objectives (PO) of the EE program
NUL-HCMC will become a research university of international quality.	PO1. Provide students with a solid foundation of basic knowledge about Environmental Engineering. PO2. Train students to competently use self-study skills, critical thinking skills and professional skills and creative thinking in research, design, and operation of waste treatment systems as well as managing and recycling natural resources
NLU-HCMC is a multi-disciplinary university committed to producing creative and highly qualified professionals, doing research, having extension, disseminating information, transmitting knowledge, and transferring technology to meet the demands of sustainable socio-economic development in Vietnam and in Asia.	PO3. Provide students with the ability to communicate effectively, to organize, lead and work in teams. PO4. Train students to be able to make effective use of the idea-forming capabilities: planning, implementation, and evaluation. PO5. Train students to be able to grasp social needs, fulfill social responsibilities and professional ethics.

To achieve the POs of the EE program, DET also established a system of 16 Program Learning Outcomes (PLOs) as summarized in **Table 4** [Core Exh. 9.c.1]. The relationship between these PLOs and the five POs of the EE program was also shown in **Table 5**.

Table 4. Expected Program Learning Outcomes (PLO) of the EE program

PLO category	PLOs	Major contributing courses
General knowledges	PLO 1: Apply basic knowledge of natural and social sciences to the field of Environmental Engineering PLO 2: Apply knowledge of data collection and analysis of influencing factors.	- General Chemistry, General Chemistry Laboratory - General Law - Descriptive Geometry - Technical Drawing
Professional knowledges	PLO 3: Understand the application and analysis of chemical reactions in the environment PLO 4: Know how to apply waste treatment techniques PLO 5: Understand and apply laws, regulations, standards… in environmental and resource management PLO 6: Explain things and phenomena occurring in the environment	- Pumps and Pumping Station - Environmental Hydraulic Processes for ET - Environmental Microbiology - Environmental Biotechnology Processes - Water Supply and Drainage Network - Environmental Engineering Chemistry - Physical Chemistry - Solid Waste Management and Process and Equipment in ET - Process and Equipment in ET - Construction Engineering - Supply Water Treatment - Environmental Analysis - Indoor Water Supply and Drainage Network - Urban Wastewater Treatment - Industrial Wastewater Treatment - Field trip 1 – 2 - Graduation Internship - Worker Internship - Industrial and Hazardous Solid Wastes Treatment - Air Pollution Control Engineering - Cleaner Production in EE
General skills	PLO 7: Show good communication PLO 8: Use English fluently	- Negotiation Skills, Job Finding Skills, - English 1, English 2, English for ET
Professional skills	PLO 9: Apply knowledge about Research skills on issues related to waste and pollutant treatment. PLO 10: Develop relevant skills in computing, designing, and testing experimental models to select optimal parameters for treatment plants.	- Project on Water Supply and Drainage Network - Project on Supply Water Treatment - Project on Indoor Water Supply and Drainage Network - Project on Urban Wastewater Treatment

	PLO 11: Develop relevant skills in operating waste treatment systems in real conditions PLO12: Apply knowledge of skills in applying environmental laws and policies to waste treatment plants.	- Project on Air Pollution Control Engineering - Project on Industrial Wastewater Treatment - Project on Cleaner Production in EE - ET Experiment - Thesis/Minor Thesis on EE
Awareness	PLO 13: Take social responsibility seriously PLO 14: Take responsibility for the environment and resources seriously	- General Law - Environmental Law and Policy
Attitudes	PLO15: Exercise standards in communication and behavior PLO16: Respect others	- Negotiation Skills

Table 5. The relationship between Program Outcomes (POs) and Program Learning Outcomes (PLOs)

POs	PLOs															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																

General knowledges	**Professional knowledge**	**General skills**
Professional skills	**Awareness**	**Attitudes**

2.1.2. The expected learning outcomes cover both course specific and generic (i.e., transferable) learning outcomes

EE always attaches special importance to soft skills, career skills, and professional ethics, which strengthens learners' abilities to adapt to working conditions after graduation. Criteria of graduation of EE are (i) Knowledge (General knowledge and Professional knowledge); (ii) Skills (General skill and Professional skill) and (iii) the Awareness and Attitudes (**Table 6**). Quality of learners is controlled not only from the input but also through the entire learning process based on learner-centered teaching methods; the learning process is evaluated based on 03 learning environments: inside classroom, outside classroom, and in society.

Table 6. Expected PLOs

No.	PLOs	Knowledge	Skill	Attitude
1.	Apply basic knowledge of atmospheric, soil and water environment into environmental engineering	x		
2.	Apply knowledge in collecting data and analyzing impacting factors	x		
3.	Apply and analyzing material transforming reactions in the environment	x		
4.	Apply skills in waste treatment	x		
5.	Understand and be able to apply law, regulation, and standards in environmental and resource management	x		
6.	Be able to explain event and phenomenon occurring in the environment	x		
7.	Show effective communication		x	
8.	Use English fluently		x	
9.	Apply research skills on issues related to waste treatment in the environment		x	
10.	Apply skills on computing, designing experimental models and piloting models to choose optimal parameters		x	
11.	Apply skills in operating waste treatment systems in reality		x	
12.	Apply knowledge of environmental laws and policies to waste treatment works		x	
13.	Take social responsibility seriously			x
14.	Take social responsibility for the environment and resources seriously			x
15.	Exercise standards in communication and behavior			x
16.	Respect others			x

The expected learning outcomes of the training program on soft skills and specialized skills are achieved through classroom teaching and learning activities such as group discussion, group work. In addition, it is also demonstrated through social and cultural activities, field visits, and internships at the factories (**Table 7**).

Table 7. Skills matrix of Co-curricular and extra-curricular courses

Co-curricular and extra-curricular activities	PLOs									
	7	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Field trip 1	x								x	x
Field trip 2	x								x	x
Worker Internship	x								x	x
Graduation Internship	x								x	x
ET Experiment				x	x	x				
• Project on Water Supply and Drainage Network • Project on Supplied Water Treatment • Project on Indoor Water Supply and Drainage Network • Project on Urban Wastewater Treatment • Project on Air Pollution Control Engineering • Project on Industrial Wastewater Treatment • Project on Cleaner Production in EE	x	x	x	x	x	x	x	x	x	x
Thesis/Minor Thesis	x	x	x	x	x	x	x	x	x	x
Cultural and Social Activities	x	x	x				x	x	x	x

2.1.3. The expected learning outcomes clearly reflect the requirements of the stakeholders

These PLOs are developed based on the requirements of the stakeholders: employers, alumni and lecturers (**Table 8**). The construction steps are as follows:

- Based on the Circular No. 07/2015/TT-BGDĐT, dated April 16, 2015 of MOET, promulgating the Regulation on the minimum amount of knowledge, the requirements on the competencies that learners can achieve after graduation. for each training level of higher education and the process of formulating, appraising and promulgating university-level training programs [Exh. 2.1.3.a];
- Organize workshops to develop PLOs and survey opinions of stakeholders: alumni [Core Exh. 9.I.3] and employers [Core Exh. 9.I.4] on requirements for the EE program; survey summary of stakeholders' feedback: employers and alumni [Core Exh. 9.I.5];
- Compare PLOs/Curricula with other universities: HCMC University of Technology (HCMCUT) and Can Tho University (CTU) [Exh. 2.1.3.b];
- The PLOs are shown through course programs, lectures improve the education program according to the opinion of the Scientific and Academic Council of FENR [Exh. 2.1.3.c], publish the education program on the Website [Exh. 2.1.3.d];
- The PLOs are shown through the training program, students evaluate courses each semester for the improvement of the PLOs [Core Exh. 9.I.1] and summarized feedback [Core Exh. 9.I.5].

Table 8. Requirements of stakeholders

Stakeholders	Contributions	PLOs
Employers	• Add more related courses on air pollution control • Enhance skills in designing and operating waste treatment systems. • Enhance foreign language skills	PLO7, PLO8, PLO9, PLO10, PLO11, PLO12
Alumni	• Strengthen experimental and field practice, and internship	PLO10, PLO11
Lecturers	• Reduce the number of general courses, increase the number of fundamental and specialized courses	PLO7, PLO8, PLO9, PLO10, PLO11, PLO12, PLO13, PLO14, PLO15, PLO16
Students	• More projectors and fans are needed in classrooms • Enhance practice and internship	PLO7, PLO8, PLO9, PLO10, PLO11, PLO12

2.2. CRITERION 2 - PROGRAM SPECIFICATION

2.2.1. The information in the program specification is comprehensive and up to date

The program has been offered since 2001 based on the Regulation of the Ministry of Education and Training [Exh. 2.2.1.a] and the needs of stakeholders. The program has been revised 4 times to help improve the competence of students according to outcomes. In this direction, the EE program was changed from 222 modules to 143 credits (2008), 140 credits (2010), 135 credits (2014) and 136 credits (2018), to help Students acquire and apply knowledge, practice skills [Exh. 2.2.1.b].

The program is improved every 4 years. This process begins with gathering the needs of Stakeholders: Employers, Alumni, Students, and Lecturers. The questionnaires were sent to the Stakeholders to help get their feedback on the structure and content of the training program [Core Exh. 9.l].

The updated program in 2014: continue to increase the proportion of time for scientific research and soft skills training, as well as increase the hours of self-study,

The program was reduced to 135 credits for 4 years in 2014. With this modification, students can complete the program within 3 to 5 years [Exh. 2.2.1.c].

The updated Program in 2018: The program has been prepared since 2017, to standardize the program and harmonize into the regional and international human resources. The program will be constructed in accordance with requirements of the MOET and on the survey results. The program will focus more in professional English to help students in reading the materials and career skills required by employers. PLOs are formulated clearly [Exh. 2.2.1.d].

The updated Program in 2020: The program was increased to 158 credits (118 compulsory and 40 elective credits), of which 41 credits are in general knowledge and skills block (37 compulsory and 4 electives credits), 46 credits (40 compulsory and 6 elective credits) are in fundamental knowledge and skills block and 59 credits (41 compulsory and 18 elective credits) in specialized knowledge and skills block (12 credits for graduation thesis). The average training time is 4.0 years, however, students can shorten or extend the time to complete the program according to their individual conditions [Exh. 2.2.1.e].

The program is presented in the version 2018. Here is the information about the program such as:

Degree awarding institution: Nong Lam University Ho Chi Minh City.

Training unit: Faculty of Environment and Natural Resources

Degree Title: Environmental Engineering Engineer

Program name and code: Environmental engineering, 7520320

Type of training: Full-time, credit-based

Brief introduction of the program: 136 credits (100 compulsory and 36 elective credits), of which 41 credits are in general knowledges (37 compulsory and 4 electives credits), 29 credits (23 compulsory and 6 elective credits) are in fundamental knowledges and 56 credits (40 compulsory and 16 elective credits) in specialized knowledges (10 credits for graduation thesis). The average training time is 4.0 years, however, students can shorten or extend the time to complete the program according to their individual conditions.

Elective credits are structured into 7 specialized groups, arranged according to the depth of knowledge or skills that direct students to their future jobs after graduation.

Engineers graduating from the program can teach at other universities or colleges, work for waste generating companies, and waste treatment companies. In addition, engineers can also continue to study both domestically and internationally.

2.2.2. The information in the course specification is comprehensive and up to date

The structure and position of the course are arranged for students to easily register for the course and establish their own academic timetables for the completion of the whole program. There are three types of the course; theory course, theory and practical course, and internship course. The PLOs are translated into the courses through the course learning outcomes (CLOs) and stated in the course specification [Exh. 2.2.2.a]. The outline contents are designed by lecturers and must be evaluated by the Environmental Engineering Advice Council. That helps the course contain all the information needed for lecturers and students [Exh. 2.2.2.b and Core Exh. 9.d]. Information of the course specification is represented as follows:

- General information includes course title, code of course, number of credits, compulsory or elective course;
- Brief description of the course summarized main contents of the course;
- The course goal, CLOs and contribution of the course to PLOs;
- Teaching and learning methods;
- Assessment methods, CLO assessment matrix, rubrics and evaluations;
- Textbooks or references of the course;
- Structure and content of the course, Lesson Learning Outcomes satisfy CLOs;
- Requirements of the lecturer and information about lecturers;
- Date on which the course specification was written and leaders who approved it.

Course outlines are evaluated, modified and updated annually by lecturers based on student feedback and achievements of research activities. All changes in content such as learning materials, teaching and assessment methods must be approved by the Head of the Department [Exh. 2.2.2.c].

2.2.3. The program and course specifications are communicated and made available to the stakeholders

The program and course specifications are communicated to stakeholders using different means (**Table 9**) updated on the websites at FENR website and EE training program.

Means of promoting the program are: poster [Exh. 2.2.3.a], and facebook.

Program specifications and course specifications are also published in the student handbook to help Students, based on the program in the student handbook to decide the courses that the Student wishes to enroll in [Exh. 2.2.3.b].

Table 9. Ways for communication to stakeholders

Program specification via					**Stakeholders**		**Course specifications via**	
Website	**Facebook**	**Student Handbook**	**Social media/ events**	**Class meeting**		**Website**	**Social media/ events**	**Class meeting**
X	X	X		X	Students	X		X
X			X		Potential students	X		
X			X		Student relatives	X		
X	X	X			Alumni	X		
X		X	X		Employers	X	X	
X		X			Staffs	X		
X					The society	X		

2.3. CRITERION 3 - PROGRAM STRUCTURE AND CONTENT

2.3.1. The curriculum is designed based on constructive alignment with the expected learning outcomes

The curriculum of Environmental Engineering (EE) Program was issued under the Decision No. 641/QĐ-ĐHNL-ĐT on 15th October 2018 by NLU's President. This curriculum was revised by modification of the EE curriculum in 2011 and 2014 to meet the requirements of the labor market. The curriculum is applied with international standards and supplies full knowledge, skills and attitude for students in the professional working environment [Exh. 2.3.1.a].

The EE curriculum has been designed based on the POs and PLOs. All courses and extra-curricular activities have been designed to contribute to students' achievement of the PLOs as shown in Appendix 2. A sample is given in **Table 10**.

Table 10. Contribution levels of the Renewable Energy (212547, 02 credits) to PLOs

Course code	**Course name**	**Contribution levels of the course to PLOs**															
212547	**Renewable Energy**	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
		S	S	H	H	S	S	S	S	H	N	S	H	S	S	S	S

This matrix describes clearly the constructive alignment of the PLOs and the contribution of each course with the different cognitive levels of Bloom's taxonomy. The expected learning outcomes of each course (CLOs) are developed by the lecturers to contribute the PLOs of the EE program Based on the CLOs of each course, lecturers have designed the lesson learning outcomes (LLOs) and integrated the corresponding teaching and learning processes as well as assessment methods along with extra-curricular activities to help students to develop the knowledge, skills and attitudes that will enable them to achieve the CLOs as well as PLOs [Exh. 2.3.1.b].

2.3.2. The contribution made by each course to achieve the expected learning outcomes is clear

Course outlines are designed to achieve the PLOs according to the CLOs. An example is given in **Table 11**. The contribution of each course to the PLOs of the EE program is displayed in Appendix 2.

Table 11. Relationships between CLO of Renewable Energy (212547, 02 credits) to PLOs

CLOs	Having attended the course, learners are able to	PLOs
Knowledge		
CLO1	Understand renewable energy sources	PLO1, PLO2
CLO2	Assess the impact of renewable energy sources on the environment while exploitation and use	PLO3, PLO4,
CLO3	Orientate to use various renewable energy forms and their potential development in the future	PLO5, PLO6
Skills		
CLO4	Know how to coordinate with team members to solve the problems, and respect team opinions	PLO7, PLO8
CLO5	Collect the necessary data to carry out research topics	PLO9, PLO11, PLO12
Attitudes and Awareness		
CLO6	Have a sense of responsibility and respect for everyone	PLO13, PLO14, PLO15, PLO16

This matrix illustrates that the contribution level of the courses for the PLOs is gradually leveraged from low to high by means of general courses, fundamental courses and specialized courses as follows.

- General courses provide the broad knowledge for students to consolidate and develop their professional career path and life-long learning ability.
- Fundamental courses such as Physical Chemistry, Environmental Chemistry, Environmental Microbiology, etc. provide the fundamental knowledges and skills for students. These courses are required in advance, which students must complete before taking the specialized courses [Core Exh. 9.c.1].
- Specialized courses such as worker internship, urban wastewater treatment, environmental monitoring, industrial wastewater treatment, ET practices, factory internships, graduation internships, etc, provide students with professional knowledge and skills to operate process techniques in environments.
- Finally, graduate thesis helps students synthesize their learning across the EE programme, solve practical problems in the field of environment and demonstrate holistically their development of graduate capabilities.

The gradually increasing difficulty of the course content is logically sequenced in the program structure and this can help PLOs to be achieved effectively. To achieve the output standards of EE, students must have general and in-depth knowledge of environmental components through fundamental courses such as: Fundamentals to Environmental Science, Environmental Biotechnology Processes, Hydraulic Processes in ET, Air and noise pollution control.

2.3.3. The curriculum is logically structured, sequenced, integrated and up-to-date

The curriculum is designed to make the courses logically structured, sequenced, integrated and up-to-date based on regularly benchmarking with EE curricula of some prestigious universities in Vietnam such as those of HCMCUT and CTU in the most recent comparison (2019) [Exhs. 2.3.3.a].

The training duration of the EE program is 4 years consisting of 136 academic credits including 100 compulsory credits and 36 elective credits. The curriculum is divided into 3 areas of knowledge including general knowledge (37 compulsory and 4 elective), fundamental knowledge (23 compulsory and 6 elective), and specialized knowledge (40 compulsory and 26 elective courses including 10 credits of graduate thesis). Besides, the students have to participate in activities of Communist Youth Union and Student Association and evaluate the conduct, ethics of lifestyle, law and national defense.

The curriculum of the EE program is logically structured with a good balance between general, fundamental, and specialized knowledge as shown in **Figure 2**. The general courses accounting for 30% of the total accumulated credits provide the broad knowledge which will be necessary for students to develop their professional career path and promote lifelong learning ability after graduation. The depth and extent of the curriculum is shown in the section of fundamental courses which contain knowledge relating to scientific research, technology environmental treatment techniques. The fundamental knowledge accounts for 21% of the total accumulated credits that offer students with theoretical and practical understandings with wider vision in the environmental career. The specialized courses and graduate thesis accounting for 49% helps students acquire their professional knowledge and at the same time understanding the different activities of the environmental profession.

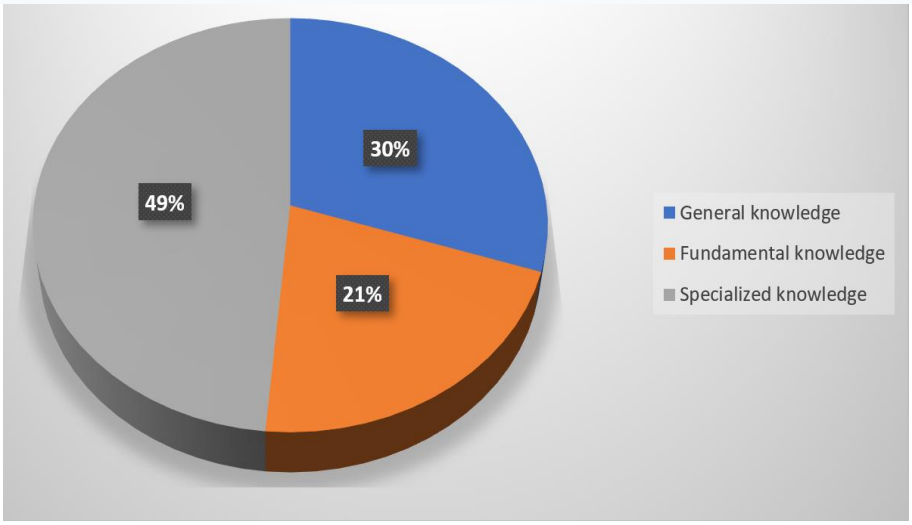


Figure 2. The logic structure of the EE program.

The T-shape of the EE program describes specific attributes of a desirable engineer (**Figure 3**). The vertical bar of the T (fundamental and specialized knowledge) refers to expert knowledge and experience in the curriculum that allows students to conduct the creative processes in the field of environmental, while the top of the T (general knowledge) refers to an ability to collaborate with experts in other disciplines and a willingness to use the knowledge gained from this collaboration.

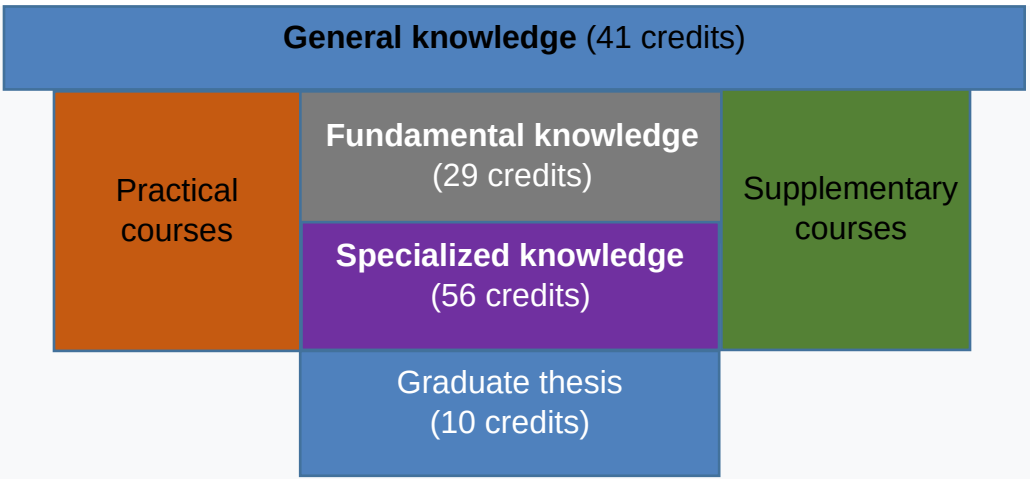


Figure 3. T-shape of EE curriculum program in 2018.

The curriculum is properly designed based on social requirements and to meet the aspiration of students. The courses of environmental professional knowledge provide students with not only knowledge and practical skills but also are a strong foundation for further development in their careers. Furthermore, this group of knowledge equipped to students also enables them to study further and higher. They can do a second discipline in parallel with the environment by taking the professional courses of the second discipline and skip the ones of fundamental knowledge [Exhs. 2.3.3.b and c].

The curriculum contains required courses as conditions for students to approach and obtain better outcomes from later courses. However, to make it easier for students to plan a study schedule for the whole program or each semester, each course has only 1 or 2 required courses in advance. In addition, the elective courses create favorable conditions for students to focus more deeply in the field of environment or to extend into other related fields in order to have more opportunities of employment, once graduated. This proves that the curriculum is designed and built flexibly in order for students to meet the increasing requirements of the labor market.

2.4. CRITERION 4 - TEACHING AND LEARNING APPROACH

2.4.1. The educational philosophy is well articulated and communicated to all stakeholders

NLU has not built the educational philosophy. The university's educational activities are carried out according to the educational principles presented in the Education Law 2019. Based on these educational principles, the university has established a vision, mission and strategic goals.

In order to achieve the vision, mission and strategic goals of NLU, the Environmental Engineering program was built with the main purpose of training Environmental engineers with in-depth knowledge, skills, background and high responsibility to meet the requirements of employers and become useful citizens for the development of society. This vision, mission and strategic goals are presented on the website of NLU as well as on the website of FENR [Exhs. 2.4.1.a and b].

Lecturers, students or interested parties can access NLU's vision, mission, and strategic goals through the university's website, the faculty website, or the bulletin board attached to the faculty office. For first-year students, they were introduced and distributed a student guideline so they could learn more about the university [Exh 2.4.1.c].

2.4.2. Teaching and learning activities are constructively aligned to the achievement of the expected learning outcomes

To achieve the PLOs, a series of teaching and learning activities are implemented as follows:

(1) Before starting the first semester, fresh students participate in the civic activity week and exchange activities between the Dean of the Faculty and the new students. Through these activities, students are introduced to better understand the academic regulations, study plans, credit learning methods, independent learning methods, and course registration methods as well as the possibility of participating in scientific research projects [Exh. 2.4.2.a]. As a result, students will find the learning method in university including teamwork, discussions, presentations, searching for documents on the internet, presenting data and documents, writing emails, and more. These knowledge and skills will be applied and enhanced throughout the program of study.

Basic knowledge helps students have a good foundation to learn specialized knowledge. Basic knowledge program contains 41 credits (30.1%) including 37 mandatory credits and 4 elective credits, including courses such as: General Informatics (helping students have the knowledge and skills to use basic informatics); English courses including English 1 and English 2 help students find, read and understand English documents; Physical Education 1 and Physical Education 2 help students be strong to ensure their study and work after graduation; Basic ecology helps students have basic knowledge about environment, environmental pollution and causes of these pollution problems, ….

(2) Basic knowledge and specialized knowledge are provided to students from basic to advanced, about environmental technology such as Technical Drawing, Hydraulic Processes in ET, Pumping and Pumping Station, Supply Water Treatment, Urban Wastewater Treatment, Air Pollution Control Engineering, Urban Solid Waste Management, etc. Students improve their document retrieval skills and apply basic knowledge to solve problems by themselves under the guidance of lecturers [Exh 2.4.2.b].

Many teaching methods are used in combination to increase students' skills such as lecture, discussion, discussion in group, teamwork, problem solving, etc. Students are divided into groups of five to ten people (depending on the course) for class activities (such as assignments, seminars). These activities are providing an ideal environment for learning [Exh 2.4.2.c].

(3) Practical courses require students to take samples for laboratory testing. The Field trips are often combined with theoretical courses so that students can apply their knowledge to real situations, with the guidance of lectures. During the Field Trips of 6th and 7th semester (Field trip 1 and Field trip 2), students will visit several companies and waste treatment plants to connect theory with practical knowledge [Exh 2.4.2.d].

(4) Students' passion for experimentation and discovery is stimulated through the course Environmental Research Methods (2nd year). Students can freely register to carry out scientific research projects with the guidance of lecturers. Students can use the laboratories for research with compatible equipment, instruments and models widely used in industries. Moreover, they are also supported by the Scientific Research Management Department with the entire cost of carrying out the research project if the undergraduate project is approved. By undertaking research, students develop independent thinking and reflective learning. In addition, in order to increase students' motivation in research, the lecturer also guides students to participate in National level competitions such as Eureka, or other competition such as “Green Living” organized by FENR, NLU [Exhs. 2.4.2.e, f, and g].

(5) In the 8th semester, students must do an internship at the company(s) for two months, where they can apply the basic principles and theories learned in university under the guidance of a lecturer. From this internship result, students conduct their graduation thesis (10/136 credits) or graduation essay (5/136 credits) to solve the environmental problems of enterprises and society such as designing the wastewater treatment system or exhaust

treatment system, ... Students are encouraged to contact companies through the introduction of the Student Affairs Department, or the lecturers of DET or the students themselves contact if possible.

(6) The lecturers develop the program according to the course outline with appropriate teaching and assessment methods. The cycle of "teaching, analyzing, evaluating and improving" is always carried out continuously in the teaching process in order to achieve better teaching efficiency through a number of activities such as observing teachers in class, surveying, monitoring student feedback, etc. After evaluating teaching methods from students via surveys [Core Exh. 9.l.1], instructors collect all feedback and review it to revise the curriculum and outline as well as teaching methods.

In addition, NLU offers students a supportive environment. With various teaching equipment such as blackboards, projectors, speakers, microphones, etc., lecturers flexibly combine blackboard with projector so that students can easily understand the lesson. Lecturers use laptops which are installed with application software such as AutoCAD, Access, Excel, ArcGIS, ... to teach basic and in-depth knowledge of environmental technology. The classes are held in lecture halls with free Wi-Fi to look up information or transmit data via email or Google drive. In addition, the NLU library is also equipped with a self-study area and free Wi-Fi, serving up to 8:00 pm daily for students' research and learning needs. The self-study area in the library with a variety of Vietnamese and English books as well as e-books will help students learn more easily. Students also study in groups at the self-study areas in the halls of the lecture halls. The laboratory is equipped with equipment and tools for students to study, research, make graduation thesis/graduation essay and science playground. Students are also supported by teaching assistants by taking lecture notes, doing exercises and checking the learning process.

In response to the Covid epidemic situation, NLU and FENR have implemented a number of training methods suitable to the situation of social distancing and prevention of Covid-19 infection to ensure the teaching program continues as planned. The online learning program has been implemented. Students are notified of the schedule on Academic Affairs Office (AAO) website, and lecturers in charge of courses will send emails as well as links to the online class schedules for students. Online learning is organized through software such as Zoom, Microsoft team, Google meet, ... (Exhs. 2.4.2.h, i and j). Lecturers will provide materials to students by sending emails or uploading links on their personal websites (Exhs. 2.4.2.k and l).

In addition, NLU and telecommunications companies have signed a commitment to ensure the internet signal for students in the dormitory during online learning (Exh. 2.4.2.m). The online learning program is implemented until the epidemic situation is under control, then students will continue their study program at university (Exh. 2.4.2.n).

2.4.3. Teaching and learning activities enhance life-long learning

Teaching and learning strategies are “independent learning” or “learner-centered” that promote lifelong learning including technical and soft skills.

The passion for learning through career orientation and job opportunities from the very beginning of the first year helps students find the necessity of whole life learning. During the first two years, students learn fundamentals from Maths, Chemistry, Biology and Social Sciences that help them solve future environmental engineering problems. Soft skills such as teamwork, searching documents on the internet, presenting documents, writing emails, ... are provided in the courses of Negotiation Skills, Scientific Research Methods and then applied in thematic reports, research or graduation thesis…Students' ability is improved through English courses and enhanced through the Environmental English course. Students can use these skills to read and write English scientific articles or books in their major.

To develop digital capabilities, the program is built with some application software (AutoCAD, Access, Excel, ...) to help students approach real models to solve management and technical problems. art. In addition, most of the modules are provided with documents via email or google drive, requiring students to make thematic reports and present them in PP or drawing designs to help students enhance their self-study ability, effectively manage time, increase the ability to use specialized software and increase the ability to find information on the internet [Exh 2.4.3.a].

In order to develop students' communication and social skills, the Youth Union of the university and the faculty organizes a number of activities such as the Green Summer Volunteer Campaign, the National University Entrance Examination Support Campaign, humanitarian blood, supporting people affected by natural disasters and floods, some professional competitions such as Green Living, Green Environment, In addition, clubs such as YMT Club, Ecotourism Club are also places to help students develop necessary soft skills for the journey to study and work after graduation [Exh. 2.4.3.b].

2.5. CRITERION 5 - STUDENT ASSESSMENT

2.5.1. The student assessment is constructively aligned to the achievement of the expected learning outcomes

Assessment of PLOs is carried out throughout the entire period from the time students enrolled at the University to the time they defend their graduation thesis [Core Exhs. 9.b and 9.c]. For EE students, there are 2 forms of graduation thesis: graduation thesis and graduation minor thesis. However, DET encourage students to do graduation theses for better knowledge in calculation and technical design. Students can proceed to graduation thesis when they have achieved a minimum of 110 credits and have a cumulative GPA of 2.5 or higher [Exh. 2.5.1.a]. Students are required to research for 6 months at the faculty's laboratory or at the enterprises where the faculty sends students for internships [Exh. 2.5.1.b]. The process of implementing the graduation thesis consists of 5 unified steps: internship at enterprises [Exh. 2.5.1.c], writing the research proposal [Exhs. 2.5.1.d and e], periodically reporting progress to supervisors [Exh. 2.5.1.f], defending the thesis [Graduation plan in 2019 - 2020] and correcting and submitting the thesis.

The thesis evaluation committee registers the average score from the score proposed by the supervisors, the score of the reviewer, and the scores of 3 other committee members officially appointed by the faculty and the university [Exh. 2.5.1.g].

Assessment of student learning outcomes is carried out throughout the 1st year to the final/last year, including various forms such as group activities, class activities (attendance, contributing ideas during class time), curriculum practice (field internship), laboratory experiment, and thesis writing [Core Exh. 9.i]. Other assessments include assessment of student self-improvement including social activities and sports activities [Exh. 2.5.1.a], computer skills (informatics outcome standards A and B), and English skills (English outcome standard) [Exh. 2.5.1.h].

During the time of the COVID-19 pandemic, due to the blockade requirements of the government, NLU has switched to online teaching and learning activities. The online teaching and assessment and the defense of the online graduation thesis have clear regulations (Exh. 2.5.1.i) to ensure online assessment meets the expected learning outcomes.

2.5.2. The student assessments including timelines, methods, regulations, weight distribution, rubrics and grading are explicit and communicated to students

All courses in the curriculum have individual outline [Core Exh. 9.d]. The outline provides students with information such as schedule, assessment methods, regulations, weight of each

assessment form, and assessment criteria for course completion. The assessment timeline is also notified to students at the beginning of the semester and the assessment results will be announced to students 1 month after the final exam through the website of the faculty and the student account on AAO website [Exh. 2.5.2.a].

In the first lectures of the semester, the lecturers inform the students about the timeline and methods of assessment, grading spectrum, and evaluation criteria in accordance with outlines. Assessment methods including written exams, multiple-choice exams, essays, quizzes, homework, project, and graduation thesis all have clear criteria marks.

The weight of each assessment form is considered according to the POs and the contribution to the PLOs of the curriculum. Theory and practical subjects are normally scored in the following format: attendance score, midterm exam score, and final exam score [Core Exh. 9.i]. Field trip scores are calculated through group report. With the graduation thesis, students are informed about the regulations and procedures of thesis process. The score is calculated in 5 categories, including the score of the supervisor, the score of the reviewer, and the three members of the committee [Exh.2.5.1.g]. Scores will be read out to students at the end of the committee discussion session and will be informed to each student at the end of the committee meeting session.

When teaching and learning online during the COVID-19 pandemic, NLU's online training regulations are clearly announced to students through the AAO website.

2.5.3. Methods including assessment rubrics and marking schemes are used to ensure validity, reliability and fairness of student assessment

Lecturers regularly adjust and improve assessment methods to match the PLOs of the training curriculum and the CLOs of the subject, including seminar evaluation, practice assessment, field trip, internship report and graduation thesis. Learning outcomes are assessed based on students' knowledge, skills, attitudes, and responsibilities after each semester or each learning activity (field trip, internship). Reliability and equality are expressed through a 4-point scale or a letter score of 8 levels (A, B+, B, C+, C, D+, D, and F) [Exh. 2.5.1.a].

Students are assessed during their studies based on their overall GPA and cumulative GPA by semester, year and end of the program. Graduation grading is based on classification: High Distinction (3.6-4.0), Distinction (3.2-3.59), Credit (2.5-3.19), Pass (2-2.49) [Exh. 2.5.1.a].

Examination schedules and announcements are displayed on the website of faculty, website of the AAO and emailed to each student about 10 days before the examination [Exh. 2.5.3.a]. Procedures for academic warning and expulsion are sent to each student and the list is published afterward [Warning and expulsion].

The results of the English and computer skills outcome standards are announced monthly according to the list of students registered for the exams on the website of the AAO, the Center for Foreign Studies (CFS), and the Applied Informatics Center (AIC).

Because there are 4 diplomas awarded in a year, the Department is flexible allowing students to defend their graduation thesis one month before the graduation review to make sure students have the opportunity to graduate in March, June, September, and December at NLU.

2.5.4. Feedback of student assessment is timely and helps to improve learning

Assessment feedback from lecturer is timely for students to improve learning methods and for lecturers to adjust teaching methods. In each course, a variety of assessment methods are implemented such as flash quiz, reward for point-based answers, 15-minutes exams, and 30-minutes exams written tests. The results of these tests are communicated to students within the one or two weeks. Based on the results, the lecturer will promptly adjust the teaching method to ensure that the

students understand the lesson better. Students can also decide to change their learning method if the method is not suitable for the course. The university also allows students to withdraw the subject after 4 weeks of study [Exh. 2.5.1.a] and [Withdraw the subject announcement].

For the end-of-term exam (final exam), a variety of assessment methods are agreed upon with students from the first lecture of the semester, exam results are published on the faculty's website from 14-21 days after finishing the last exam of the semester.

For the graduation thesis proposal, students will edit it at the request of the supervisor. During the period of implementing the thesis, the supervisors review the thesis according to the student's work progress as outlined in the proposal [Exh. 2.5.4.a]. This helps students follow strictly with the proposal and complete the thesis on schedule and with approved content.

Timely feedback on student assessment is also the basis for the university, faculty, and department to add new machinery and equipment, and upgrade facilities for teaching and learning activities [Exh. 2.5.4.b].

2.5.5. Students have ready access to appeal procedure

The results of the exams are published on the faculty's website, if students have questions about their scores, they can submit a request for a review to the faculty. The Head of the Department will decide on the re-evaluation, and the results will be sent to students as soon as possible. Complaint time is one week from the time of announcement of test scores [Exh. 2.5.5.a]. Appeal procedure has been guided clearly by the University and informed to students via website or student handbook [Exh. 2.5.5.b].

Complaints and feedback during the student's learning process will be resolved by the academic advisor and faculty member via email and face-to-face meetings [Exh. 2.5.5.c]. The faculty Facebook fanpage is also managed by the faculty so that students can quickly and easily get in touch.

2.6. CRITERION 6 - ACADEMIC STAFF QUALITY

2.6.1. Academic staff planning (considering secession, promotion, redeployment, termination, and retirement) is carried out to fulfill the needs for education, research and service

The academic staff always plays an important role in operating educational programs. At FENR, we have a high-quality academic team (mainly PhD and Master). The list of academic staff of EE program is displayed in [Core Exh. 9.m]. Every year, the Board of Faculty will revise the status of this team (training, retirement, redeployment) and suggest the modification [Core Exh. 9.n]. Besides, an overview plan is also built for each 5 years to ensure the quality of academic staff always fulfill the requirement of education following the regulation of MOET [Exh. 2.6.1.a] and of NLU [Exh. 2.6.1].

2.6.2. Staff-to-student ratio and workload are measured and monitored to improve the quality of education, research and service retirement) is carried out to fulfill the needs for education, research, and service

As demonstrated in the previous section, the ratio between student and the lecture of each educational program at NLU must follow to the regulation of MOET [Exh. 2.6.2.a]. The ratio between lecturers (Full-time Equivalent; FTE) and students should be limited to below 1/25 to ensure the quality of teaching. At the DET, its academic staff is formed by the internal and external lecturers (**Table 12**) [Core Exh. 9.m].

Table 12. Number of academic staffs and FTEs of DET till August 2020

Title	Male	Female	Total	
			Head count	FTE
Full Professor	0	0	0	0
Associate Professor	1	0	1	3
Lecturers (PhD)	0	0	0	0
Lecturers (Master)	6	1	7	7
Visiting lecturers (PhD) (from other departments of FENR)	8	3	11	4
Visiting lecturers (Master) (from other departments of FENR)	5	12	17	3

Note: (1) The number of lecturers, (2) The number of lecturers converted into Full-time Equivalent (FTEs): Full Professors = 5 FTE; Associate Professors = 3 FTE; Full-time lecturer with PhDs degrees = 2 FTE; Full-time lecturer with master's degrees = 1 FTE; Full-time lecturer with Bachelor degree = 0.3 FTE; FTE of Part-time lecturer = 20% of full-time lecturer with a same degree.

During the period of 2015-2020, the total students of the DET were in a range of 200 – 300. Therefore, the ratio between lecturers (FTE) and student of our department with and without part-time lecturers (from other departments of FENR) are regularly about 1/14 and 1/25, respectively (**Table 13**). For the workload, each internal lecturer of the EE Program will conduct approximately 270 teaching hours per academic year, following the regulation of MOET [Exh. 2.6.2.b] and NLU [Exh. 2.6.1.b]. The Board of Department has a responsibility to modify the academic staff every year to ensure the appropriate ratio between enrollment student and lecturers and the sufficient workload of academic staffs [Exh. 2.6.1.c].

Table 13. The staff to student ratio of FTE

Academic Years	Total FTE of academic staff	Total Students of EE Program	Ratio
2015-2016	17	236	1/14
2016-2017	17	245	1/14
2017-2018	17	220	1/14
2018-2019	17	241	1/14
2019-2020	17	226	1/14

2.6.3. Recruitment and selection criteria including ethics and academic freedom for appointment, deployment and promotion are determined and communicated

Recruitment is the frequent activities to ensure the quality of academic staff for EE Program. Depending on the change of status of academic staff, the ratio between student and lecturers, the Board of FENR will build an annual plan and 5-year plan for recruitment [Exh. 2.6.2.b]. The major criteria of a lecturer at FENR include:

- The academic quality (academic degree, scientific papers)
- The relevant between experience of candidate and courses
- English level
- Other criteria such as age, health and physical appearance are also considered.

The employment information is annually performed following the approved procedure and published widely through the NLU website. In cases where there is an urgent need for additional workforce, the University will consider signing a labor contract before recruitment period. To be able to recruit qualified lecturers, the recruitment process of NLU is diligently designed, which includes six steps [Exh. 2.6.3.a] as in **Figure 4**.

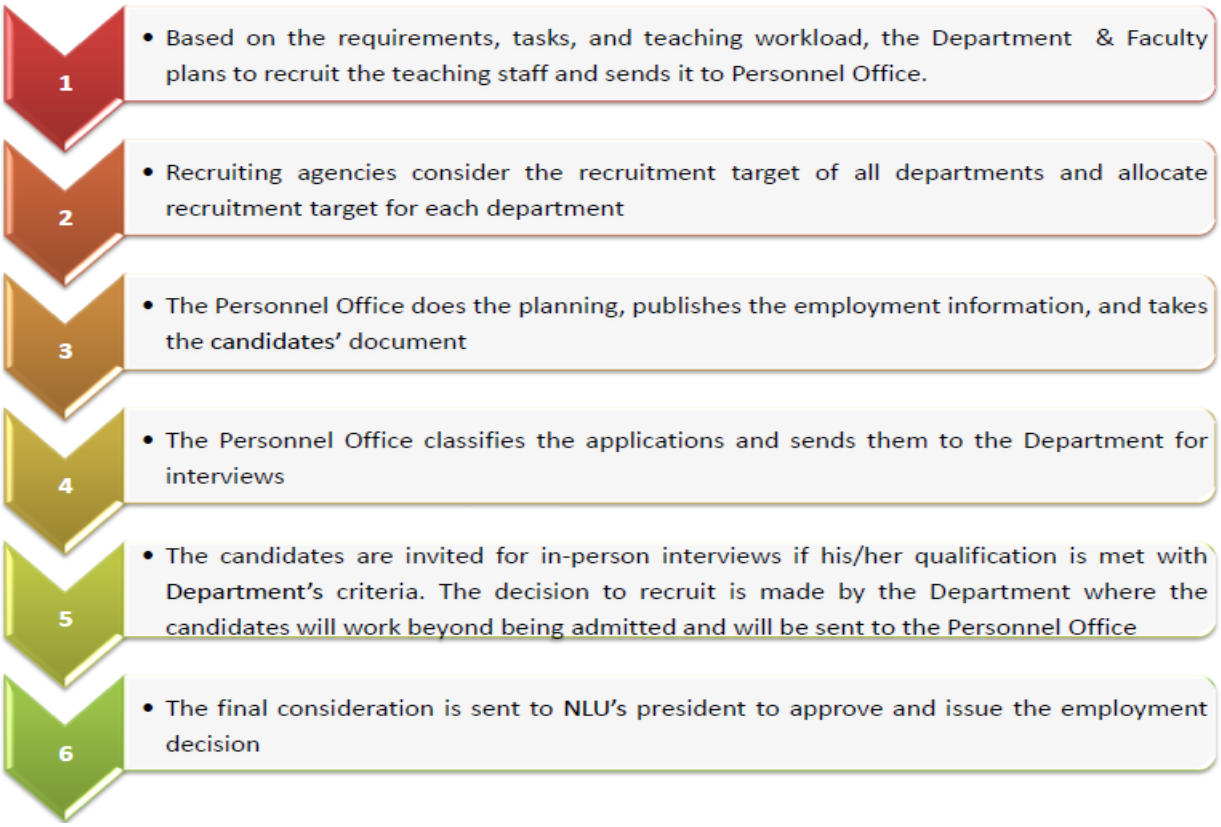


Figure 4. The recruitment process of NLU.

An academic staff at NLU will start at the position of Teaching Assistant (minimum one year) before reaching a higher position such as Lecturer and Senior Lecturer. The criteria for each position must be followed the regulation of MOET [Exh. 2.6.1.a]. If the lecturers hold a PhD degree, they can apply for higher positions such as Associate Professor and Professor. The criteria for these positions must follow the regulation of MOET [Exh. 2.6.3.b].

2.6.4. Competences of academic staff are identified and evaluated

According to the regulations of MOET and NLU [Exhs. 2.6.1.a, b, and Core Exh. 9.j.1], academic staffs of FENR (in general) and of the EE Program (in specific) must have a high level of academic knowledge and rich in experience in teaching and research. For example, lecturer and senior lecturer must be experts in their teaching subject and have good educational skills to transfer the knowledge to their students. Besides, the lecturer must ensure a high quality of research. From 2020, NLU requires all academic staff to publish at least one scientific paper/conference presentation per academic year. Moreover, the FENR also recommends its staff participate in at least one scientific project per year.

To ensure the high quality of education and training, academic staffs must be frequently evaluated by the students and also by the department. Normally, all academic staffs are required to present a chapter/seminar relating to their course at least one time per academic year [Exh. 2.6.4.a]. Besides, the evaluation can be processed through forms [Core Exh. 9.l.1] or the annual meeting

between students with student advisors as well as the Board of Department. The feedback from stakeholders is an important factor to the Board of Department to adjust and improve the academic staff team.

At the end of each academic year, all academic staff at FENR must prepare a self-evaluation report to summarize their activities including both teaching and research [Exh. 2.6.4.b]. All the members of the Faculty vote for the good lecturer. The vote is done in a democratic manner and finalized for promotion by the University. The voted lecturers will receive awards from higher management level. These evaluation results are important in considering further appointments of lecturers. For example, a lecturer with good evaluation results in 5 continuous years can apply for a senior lecturer position [Exh. 2.6.1.a].

2.6.5. Training and development needs of academic staff are identified, and activities are implemented to fulfill them

Training and development are the key roles to develop the academic staff at NLU (in general) and FENR (in specific). NLU also has a clear procedure and promotion policies for these educational activities [Exh. 2.6.5.a]. To ensure a high quality for the academic staff team, the Board of Faculty has a clear work plan for each 5 years. For example, PhD lecturers have a ratio of 22% in our academic team (in 2016). To improve the quality of the academic team, the Department built a 5 year - plan to increase the ratio of PhD lecturers [Core Exh. 9.n]. For Teaching Assistants, we encouraged them to follow higher educational courses such as (Master Course and Doctoral Program). In fact, FENR supported 4 teaching assistants in enrolling PhD Programs at Korea, Japan, China and Australia in the period of 2015-2020 following the procedure outlined by the University policies (**Table 14**) [Exh. 2.6.5.b]. Till 2021, the ratio of PhD lecturers in the academic team of the Faculty was 32%. For the period of 2021-2025, we expect to have 50% PhD in our team which is two times higher than the current average ratio of NLU. Besides, Lecturers and Senior Lecturers are also supported to participate in short courses to improve skills (both in teaching and research) and have a good preparation for the application of higher position [Exh. 2.6.5.c].

Table 14. Training activities of academic staffs during 2015-2020

Activities	Type	Participants
PhD courses	Education training (long-term)	4
Senior lecturer courses	Education training (mid-term)	3
Quality Assurance for educational program	Skill training (short-term)	12
Building e-learning courses	Skill training (short-term)	12
Seminar / Workshop	Research (short-term)	7

2.6.6. Performance management including rewards and recognition is implemented to motivate and support education, research and service

As demonstrated in section 2.6.4, all academic staffs of FENR must self-evaluate their work for each academic year. Based on their reports and the regulation of NLU [Exh. 2.6.6.a], all member of Faculty will vote for the evaluation of each academic staff and suggest the appropriate promotion with the Board of University as well as the MOET [Exh. 2.6.6.b]. The lecturer with a high achievement in teaching will be granted a certificate. In general, the reward of NLU has a very high competition. Every year, the department and the university only consider granting a reward for 10% its academic staffs. To achieve a good or excellent certification, the lecturer must show a very good result in both

teaching and research activities. For the certification from MOET, the candidate must be recognized as a good lecturer for 5 continuous years.

For senior lecturers and tenured staff, their performance management must focus more than on research activities. The University has a bonus award (≈ US$ 650) for academic staff if they can publish 1 ISI/Scopus paper per year. Besides, academic staff are also awarded for their efforts in publishing high quality scientific papers from NLU [Exh. 2.6.6.c] and MOET [Exh. 2.6.6.d]. The number of awarded academic staffs is shown in **Table 15**.

Table 15. Types and number of rewards for academic staffs (2016-2021)

Year	Reward	Level	Grants
2015-2016	Good Lecturer	University	1
	Excellent Lecturer	University	5
2016-2017	Good Lecturer	University	2
	Excellent Lecturer	University	5
2017-2018	Good Lecturer	University	1
	Excellent Lecturer	University	5
2018-2019	Good Lecturer	University	2
	Excellent Lecturer	University	5
2019-2020	Good Lecturer	University	1
	Excellent Lecturer	University	6

2.6.7. The types and quantity of research activities by academic staff are established, monitored and benchmarked for improvement

As a member of academic staff at FENR, a lecturer is expected to have a well performance not only in teaching but also in research (**Table 16**). For example, a lecturer holding a PhD degree should have at least one Scopus/ISI Paper per academic year [Exh. 2.6.4.b]. To support research activities, the FENR is equipped 5 laboratories related to environmental technology.

Table 16. Types and number of research projects (2015-2020)

Year	Number of research projects and management levels			Total Fund (million VND)
	University	Ministry	International	
2015-2016	1	3	1	13,000
2016-2017	1	1	1	2,500
2017-2018	1	1	2	2,100
2018-2019	4	-	1	550
2019-2020	3	1	1	900

As a leading unit in research activity at NLU, FENR always encouraged lecturers to publish their work in high quality scientific papers [Exh. 2.6.7] and archived large number of publications. Besides, the Faculty also requested that the University should provide some more financial support for academic staff participating in international conferences. During 2015-2020, academic staff of the FENR published 82 peer-review papers, 9 books/book chapters and 39 national/international conferences (**Table 17**). In 2020, the papers in ISI/ Scopus index and international book chapters from FENR were occupied around 30% of University's publication.

Table 17. Types and number of research publications (2015-2020)

Academic Year	Scientific paper	Book/Book Chapter	Conference	Total	Publication per staff
2015-2016	5	1	6	12	0.34
2016-2017	17	1	8	26	0.74
2017-2018	18	-	9	27	0.75
2018-2019	14	3	9	26	0.72
2019-2020	28	4	7	39	1.08

2.7. CRITERION 7 - SUPPORT STAFF QUALITY

2.7.1. Support staff planning (at the library, laboratory, IT facility and student services) is carried out to fulfill the needs for education, research and service

There are 198 staff in 12 offices and 8 centers (**Table 18**) in 2021. Each office and center provide specific services for students. In general, they ensure the operation of education activities at NLU. Planning policy for supporting staff at NLU is based on the developing strategy which is developed every 5-year period. In particular, a supporting staff should have at least a bachelor degree, meet the IT and language requirements, have experience in similar work, etc. [Exh. 2.7.1]. At FERN, there is 1 secretary.

Table 18. Number of support staff of NLU

No.	Office/Center	Total	No.	Office/Center	Total
1	Center for sports	1	11	Legality Office	3
2	Student Affairs Office	6	12	Personnel Office	5
3	AAO	15	13	Library	14
4	Administrative Office	9	14	Healthcare Center	4
5	International Cooperation Office	3	15	Center for International Education	2
6	Planning and Finance Office	10	16	Center for Student Services and Dormitory	37
7	Quality Management Office	4	17	Center for Student Support and Business Relations	6
8	Scientific Research Management Office	5	18	Center for Foreign Studies	2
9	Property Management Office	57	19	Center for Applied Informatics	4
10	Postgraduate Office	8	20	Youth Union Office	3
Total				**198**	

2.7.2. Recruitment and selection criteria for appointment, deployment and promotion are determined and communicated

NLU applies one recruitment procedure for all staff. Head of each Office and Dean of Faculty submit their plan for recruitment to the Board of University. After being reviewed and approved, the Personnel Office publishes the advertisement on NLU's website and reviews applicant's documents. Applicants who pass the screening will be invited to the interview with the Committee of Office/Faculty where they are applying to. Successful candidates will have a probationary period of 3 months before having a one-year contract with the University [Exh. 2.7.2].

2.7.3. Competences of support staff are identified and evaluated

To ensure the performance of support staff, a regular assessment by the faculty is taken by using the sample [Core Exh. 9.j.2] provided by the university. The frequency of the assessment is decided by each Faculty. At FERN, it is processed once a year. The supporting services provided by NLU are illustrated in **Table 19**.

Table 19. Supporting services and relevant units

No.	Supporting Units	Service
1	Center for Student Services and Dormitory	• Caring for the needs of accommodation, living, and studying for students. • Training students to have a nice and neat living style, moral and ethical behavior.
2	Student affairs office	• Carrying out the tasks of organizing the administration, organization and management of the students' learning and training activities, sports. • Solving questions of students on academic issues, teamwork, and problems in daily life. • University psychology counseling for students.
3	AAO	• Carrying out the administrative and educational tasks. • Developing a comprehensive teaching plan for each semester. Developing internship programs for students at enterprises. • Holding graduation examinations for students.
4	International cooperation office	• Managing international cooperation activities. • Formulating orientations, plans and strategies for international cooperation, aid exploitation and cooperation in the field of education and training with foreign colleges and universities.
5	Personnel office	• Implementing regimes and policies toward officials, lecturers, and employees. • Protect the political security of the university. • Administrative work, clerical, archives, receptionist.
6	Planning and finance office	• Managing of financial issues, assets, taxes of the university, and tuition fees of students. • Assisting students in the problems of tuition, loan support.
7	Property management office	• Guiding how to use, maintain, repair facilities, assets, equipment, and facilities for the whole university. • Ensure fire safety.
8	Student support and enterprise cooperation center	• Organizing periodical visits, seminars, exchange experience between enterprises with students, lecturers. • Seeking research and applied research in the production of business to support scientific research. • Receiving other support from agencies such as scholarship, equipment, and machinery.
9	Library	• Organizing course on searching and using library materials, how to log in to use online library for students. • Updating books, documents, and journals as requested by the faculty.

No.	Supporting Units	Service
10	Center for Applied Informatics	• Managing network, the university's official website, developing software for the university. • Managing and using information and technology resources to provide scientific and technological information, technology products and services to students and the university. • Managing and maintaining computer system for teaching.
11	Youth Union Office	• Giving comments, proposing issues related to students, propaganda and organizing for members, members, students to carry out activities of the university. • Maintaining relationships with unions, political organizations inside and outside the university to implement programs involving union members and students. • Encouraging students to study and practice, reflecting the needs and aspirations of students.
12	Scientific research management office	• Formulating strategies and plans for scientific and technological development and cooperation in the field of science and technology with domestic and international universities and institutes. Reporting on the scientific research activities of the university • Monitoring, managing and supporting the research activities of staff, faculty, and students, in the ways of guiding the process of scientific research, procedures related to scientific research, financial support, payment, progress monitoring, and acceptance. Monitoring the operation of facilities and equipment at laboratories.

2.7.4. Training and developmental needs of support staff are identified, and activities are implemented to fulfill them

The strategy of human resource, including support staff, is identified and reported in the Report of yearly activities of each Office/Faculty. These reports then are included in the University Activities Report.

The learning activities for support staff is the same with other staff (i.e, lecturers). The employees submit their demand by documents to the Head of their Office/Faculty, get approval, and then submit it to the Personnel Office. Once the request is approved, support staff are allowed to enroll in the training course and activities and still get the salary from the University during that time [Exh 2.7.4].

2.7.5. Performance management including rewards and recognition is implemented to motivate and support education, research, and service

The performance of staff is being assessed every academic year. The employee fills out the online form, then the Office/Center opens a meeting to review these individual assessments before summarizing and including these assessments into the Unit Performance Assessment Report [Exhs. 2.7.5.a and b].

2.8. CRITERION 8 - STUDENT QUALITY AND SUPPORT

2.8.1. The student intake policy and admission criteria are defined, communicated, published, and up to date

The quality of EE students is determined by exam scores obtained from the national examination. Candidates nationwide are selected according to the score ranked from top to bottom

of 01 of 04 groups: Group 1 (Maths, Physics, Chemistry), Group 2 (Maths, Physics, English), Group 3 (Maths, Chemistry, Biology), Group 4 (Maths, Biology, and English) [Exh. 2.8.1.a]. Candidates are entitled to the priority regime and direct admission according to the regulations of the MOET. The group subjects and the number of student intakes can change and be updated yearly, and such change is announced on public media such as leaflets, websites, newspapers, and TV [Exhs. 2.8.1.b and c]. Student admission to each program is reviewed through 3 steps: (1) Faculty will submit the student intake policy for each education program based on the teaching and learning conditions; (2) The NLU's Scientific and Training Council will review and provide the suggestion for each program; (3) MOET will base on the capacity provided by NLU to issue the official admission capacity for NLU's programs [Exh. 2.8.1.d]. In addition, new students have to take an English grading test for appropriate English classes matching their English competence. Based on this regulation, the number of EE students is shown in **Table 20**.

Table 20. Intake of First-Year Students (last 5 academic years)

Academic Year	Applicants		
	No. Applied	No. Offered	No. Enrolled
2015 – 2016	422	110	61
2016 – 2017	425	90	49
2017 – 2018	486	80	79
2018 – 2019	540	80	52
2019 – 2020	336	80	46

Annually, NLU and FENR use a variety of information channels such as local enrollment counseling, online counseling, verbally, websites, and published information relating to annual admission on mass media. In addition, NLU is participating in the Admission Day of the MOET held at high schools in many provinces. Especially, NLU successfully organizes Open Day events, Work Festival Days, and Exhibitions. This is also an opportunity for students, potential students, and relatives to know about NLU. Based on the feedback of EE's new students, the websites of NLU and FENR are good ways to deliver the NLU to potential students, accounting for 78% of enrolled students. Meanwhile, 60% of students accessed the Facebook Group of NLU, and 23% of students were advised by alumni and relatives before they decided to apply for the EE program [Exh. 2.8.1.e].

2.8.2. The methods and criteria for the selection of students are determined and evaluated

Criteria and methods for recruiting students are determined by the Department and clearly stated in the training program curriculum, as well as in the enrollment policies, which are widely announced every year [Exh. 2.8.1.a]. Currently, NLU and FENR have two enrollment methods based on (1) the results of the national high school exam following the process of MOET published yearly [Exh. 2.8.2.a] and (2) the excellent awards of potential students at national or international competitions [Exh. 2.8.2.b]. The Admission Board of NLU evaluates and nominates the candidates, and the NLU President will approve the selected new students.

In the past 5 years, the matriculation score of the EE program of NLU has been quite similar to other universities in HCMC (**Figure 5**). The number of EE students of NLU decreased due to the needs of society and the tendency of candidates. NLU is responsible for notifying new students eligible for admission no later than the beginning of September every year so that new students can complete admission procedures (except for 2020, due to the complicated situation of the COVID-19 epidemic, admission procedure takes place in October). Welcome events are posted in the NLU's schedule. On that day, the FENR collects information from new students to serve the admissions process for the following years [Exh. 2.8.2.c].

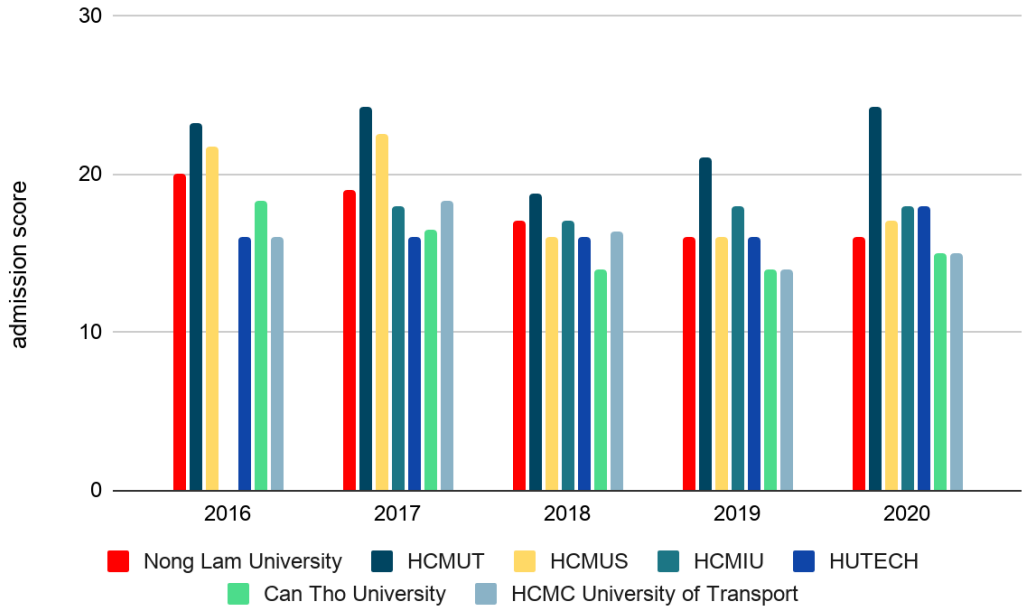


Figure 5. Matriculation score of universities offering EE programs in HCMC, Vietnam.

2.8.3. There is an adequate monitoring system for student progress, academic performance, and workload

Students are assessed academically based on grade point average (GPA) and cumulative grade point average (cGPA) for each semester and academic year. Students can view updated academic results on the website regularly. Academic warning and dismissal procedures are confirmed and published to each student [Exh. 2.8.3.a]. The English and IT assessment results are always up to date and allow students to complete the program based on the PLOs [Exhs. 2.8.3.b and c]. Annual EE students defend their thesis in February, May, August, and November to be able to graduate in March, June, September, and December, according to the university's plan. Students are classified as Excellent with a cGPA from 3.60 to 4.00, Good from 3.20 to 3.59, Satisfactory from 2.50 to 3.19, and Fair from 2.00 to 2.49 [Exh. 2.8.3.d].

The students can register for the courses, monitor the learning and exam schedules, and other notices of the Offices/Units via the websites: online registration of courses and AAO. In addition, the Facebook page of FENR is also used to convey information to students besides other official pages quickly. Besides, EE students can also receive information via email from their academic advisors, student administrators, lecturers, faculty secretary, or even from the Dean of the Faculty. The academic load of EE students is adjusted to progressively reduce the number of credits each semester, allowing for increased research, internships, and social activities. Students spend 49.7% of their time on theory courses, 30.8% on practical courses, and 19.5% on internships/projects (**Table 21**). Students can participate in Youth Union and Students' Association activities for 5 to 8 days per year in parallel to studying [Exh. 2.8.3.e]. The internship period is arranged in the 6th, 7th, and 8th semesters to encourage students to contact and familiarize themselves with practical knowledge. Students can take from 3 weeks to 4 months to practice in companies, factories, research institutes, ... [Exh. 2.8.3.f].

Table 21. Workload of students in EE program

No.	Distribution of study time	Value (%)
1	Theory courses as compared to the total program	49.7
2	Practical courses as compared to the total program	30.8
3	Internships/projects as compared to the total program	19.5

2.8.4. Academic advice, co-curricular activities, student competition, and other student support services are available to improve learning and employability

Academic advisors and lecturers are responsible for supporting and following up with student orientation and teaching activities. In addition to the university's Regulations, the academic advisors are responsible for organizing seminars on soft skills, foreign languages, entrepreneurship, and guiding and consulting in student scientific research activities [Exh. 2.8.4.a]. All of these help students conduct their experiments and projects and learn research and career ethics during their studies. The consultation is done mainly in face-to-face meetings or exchanges via email. Unions, Associations, and Clubs are responsible for organizing events and other activities to improve students' social skills. The Fanpage of the FENR's Youth Union plays an essential role in advising students and transferring announcements from lecturers, academic advisors, and the university to students [Exh. 2.8.4.b].

Competitions for students: Activities of the Youth Union, the YMT and DLST clubs always receive the support of the Faculty [Exh. 2.8.4.c]. Academic competitions are held annually, such as "Green Living" (once every two years), "Road to the top of YMT" (annual), "Ringing the wind chimes" (annual), … [Exh. 2.8.4.d]. The results of these competitions are recognized and used to evaluate students' attitude assessment and scholarship consideration.

Information technology system: NLU has 20 multimedia rooms with 765 computers connected to the internet for staff/lecturers and students to use [Exh. 2.8.4.e]. In addition, the e-portal, Wifi, and email systems are set up throughout NLU, allowing students to interact with all online supports via student ID and email address during study time [Exh. 2.8.4.f].

Dormitory: NLU dormitory has 414 rooms for 3,518 students [Exh. 2.8.4.g] and 53,540 m^2 for student service activities such as clubs, cafes, photocopy shops, pharmacies, ... Construction area 1.2 ha/1,000 students standard TCVN 3981-1985.

Health care: The health care center is located on the NLU campus, taking care of and consulting on health-related issues of students. Besides, NLU is 2.7 km from Thu Duc General Hospital and 4.6 km from Thu Duc District Hospital. Therefore, it does not take too long to go to these hospitals for emergencies related to students' health, such as accidents [Exh. 2.8.4.h].

Scholarships and learning support: Students with difficult circumstances are considered for the tuition fee exemption or reduction [Exh. 2.8.4.i]. In addition, NLU also has other policies on enrollment to attract students, such as scholarships and giving priority to dormitory accommodation for students with difficult circumstances. There are also scholarships from businesses and sponsors for students with difficult circumstances to overcome difficulties in their studies and for excellent students [Exh. 2.8.4.j]. In 2018, the Center for Student Support and Business Relations introduced 2,000 job positions from 51 employers to the NLU's graduates. The Center also received many scholarships for students (1.9 billion VND) [Exh. 2.8.4.k]. The Center for Foreign Languages, with 70 lecturers, is responsible for teaching and researching English at international standards. The Center supports students in improving their English level according to European B1 standards. The Center currently has 23 classrooms, 01 language lab (40 seats), 01 multimedia room (40 computers), 05 computer rooms (40 computers/room) [Exh. 2.8.4.l]. Center for Applied Informatics provides basic information technology courses for students according to IC3 standards and practical courses on computers (10 rooms with 385 computers) and organizes the tests for IT outcome standards of NLU students [Exh. 2.8.4.m].

2.8.5. The physical, social and psychological environment is conducive for education and research as well as personal well-being

In addition to learning in classes/laboratories, students also need entertainment and other activities. A living and studying environment established in 118 hectares ensures a comfortable place and meets the students' requirements. The stadium for physical training is relatively modern and well equipped, with a total of 3,320 m^2, meeting the needs of football, volleyball, badminton, and table tennis [Exh. 2.8.5.a]. Besides, 18,732 m^2 is also planned for outdoor sports activities such as a multi-sport field and volleyball courts at the dormitory campus [Exh. 2.8.5.b]. In addition, NLU cooperates to invest in 06 artificial turf fields on 10,200 m^2.

The landscape and construction of the FENR are sufficient to meet the activities of students of EE. With an area of 432 m^2 with 5 laboratories, it is convenient for the experiments, practice, and research activities. Because the laboratories are located close to each other, it allows the sharing of facilities, machinery, and equipment and the exchange of knowledge and skills between students and lecturers. Students are satisfied with the Faculty's learning environment because of its friendliness and efficiency.

The social environment is favorable for the development of each individual. The Faculty's Youth Union, Student Association, and Clubs regularly organize activities such as music events and sports competitions to gather students and practice social skills for students. Volunteer activities are also scheduled to help EE students become good citizens in the community, such as Green Summer Campaign, Volunteer Spring Campaign, Humanitarian Blood Donation, ... [Exh. 2.8.5.c].

Students' health is not only focused on physical but also mental health. Psychological Counseling Team (managed by Student Affairs Department) and the Nong Lam Radio channel help students overcome difficulties in life mentally [Exh. 2.8.5.d].

2.9. CRITERION 9 - FACILITIES AND INFRASTRUCTURE

2.9.1. The teaching and learning facilities and equipment (lecture halls, classrooms, project rooms, etc.) are adequate and updated to support education and research

A total number of classrooms and multi-media rooms is 126 with 22,783 m^2 to service for more than 5,000 students/year, 1.2 m^2 per student meeting Vietnam standard (TCVN 3981- 1985: from 0.9 to 1.5 m^2). There are five large buildings; in which three are three meeting rooms (> 200 seats), 23 classrooms (100 to 200 seats) and 85 classrooms with less than 100 seats each and also other classrooms under Department’s management. Supporting equipment for teaching and learning such as projectors, multi-media systems, light and fan systems are installed in each room [Exh. 2.9.1.a].

FENR has one main meeting room with an area of 45m^2, two small meeting rooms with an area of 14 and 28m^2 respectively, a main office (38m^2), 5 staff rooms (for five departments, the area ranges from 16 m^2/room to 30m^2/room), and 1 Youth Union room (12 m^2) [Exh. 2.9.1.b]. All offices and laboratories in the FENR are equipped with Internet for learning activities and Wi-Fi is also available for student access [Exh. 2.9.1.c].

Based on the strategic plan, NLU strives to upgrade facilities to support education and research activities. In particular, NLU handed over the premises of the old Applied Informatics Center to the FENR for management and built a laboratory to support teaching and research activities for students and lecturers with a total surface area of the old AIC area is 1,394m^2 [Exh. 2.9.1.d].

2.9.2. The library and its resources are adequate and updated to support education and research

The NLU has a collection of nearly 7,000 book titles, 20,000 copies of local materials, databases such as AGORA, OARE, HINARI, Proquest Central, Scopus, Sciencedirect and more than 100

scientific journals. The NLU library has an area of 6.236 m^2 and has 14 librarians; the NLU library can service more than 500 users per day. The library added 19,926 publications, in which there were 6,880 book titles for the education programmes, 55 magazines with 1,184 publications [Exh. 2.9.2.a]. Annually many books and textbooks are purchased for the specific requirements of faculties/departments [Exh. 2.9.2.b]. The library also actively subscribes for free access to Proquest Central database, the electronic database of Vietnam Library Association, and database with many useful documents of interest to many readers. The library is also equipped with resource managing software Libol 5.5 which manages borrow and return activities, statistics, documents searching, and reader management. The library includes a borrowing room, two reading rooms, two group study rooms, a 190-seat study desk and 13 computers for readers to study, to search, and to access the internet [Exh. 2.9.2.c].

Project for renovation and upgrading of the library was approved by the NLU President in 2018, some changes are to be shown in 2019 [Exh. 2.9.2.d]. With the goal of continuous improvement, the university conducts surveys on the feedback from staff, lecturers and students on the services of the library every year. The survey results show that most of the surveyed subjects rated “satisfactory” on the scale [Exh. 2.9.2.e].

Reading room of FENR (Env-reading room), is a place containing all theses of courses (for the last 3 years), drawings, projects, textbooks and reference books. It is located in the meeting room of DET, with an area of about 20 m^2 [Exh. 2.9.2.f].

2.9.3. The laboratories and equipment are adequate and updated to support education and research

The University has 86 specialized laboratories, with a total floor area of 5,578 m^2, which is dedicated to experimental - practical activities during training and scientific research. The training hall was built with a total area of 2,402 m^2 and the experimental farms are arranged with 341,034 m^2 for agricultural handling [Exh. 2.9.3.a]. The laboratories are equipped with safety equipment, fire protection, rules and troubleshooting procedures.

The main laboratory and system of experimental equipment of the environmental engineering industry include Environmental microbiology laboratory 1 and 2; Environmental Technology Laboratory, ... has an area as **Table 22**.

Table 22. Facilities for teaching, learning and research of Faculty

No	Name of Lab	Area (m^2)	Number (Room)
1.	Environmental microbiology Lab 1	38	1
2.	Environmental microbiology Lab 2	36	1
3.	Environmental Technology Lab	140	1
4.	Main Lab of Faculty	146	1
5.	Room for preparation and analysis of water	72	1
	Total	432	5

EE students can use all the above laboratories to conduct learning and research. EE laboratory equipment is supplied and procured by NLU every year [Exh. 2.9.3.b]. All equipment to help improve the capacity of education and in-depth research in the field of environment, NLU is the unit responsible for purchasing and repairing equipment according to the correct process, ensuring that it meets the requirements of the faculty [Exhs. 2.9.3.c and d]. NLU and the FENR are aware that laboratories with new equipment are the main facilities upgrading the quality of students' education.

2.9.4. The IT facilities including e-learning infrastructure are adequate and updated to support education and research

NLU upgraded its network infrastructure in 2010, internet transmission increased from 34 Mbps to 68 Mbps. In 2011, the university added 9 fiber-optic internet channels to increase the total bandwidth to 518 Mbps and to 600 Mbps in 2016. Since 2014, NLU started using Google Suite system which significantly supported e-learning activities because emails of academic staffs and students could be linked together more easily. Recently, NLU has manage 1145 email addresses [Exh. 2.9.4.a]. The website system includes 01 main domain is www.hcmuaf.edu.vn and 50 sub-domains which are electronic information pages of the units. All is constantly updated, ensuring the update and posting of the right information. The University continuously invests in upgrading the network system; LAN, WAN, WIFI [Exh. 2.9.4.b].

E-learning activities have been used by lecturers of the Faculty to teach and learn since 2019. The lecturers use Zoom Us or Google Meet software to teach. NLU currently does not have a learning management system (LMS) used to monitor and update students' learning activities, so online teaching is mainly through popular free software such as Zoom, Google, Microsoft Teams. In mid-2021, NLU has been and will be conducting dissemination and training for Instructors to teach online through the Edmodo platform [Exh. 2.9.4.c]. FENR must register to teach online 30% of the total number of subjects in charge of the Faculty/Department. Courses registered for online teaching in Semester 1 of the academic year 2021-2022 [Exh. 2.9.4.d]. In 2021, students of NLU were allowed to finish their final examination via on-line system [Exhs. 2.9.4.e and f].

2.9.5 The standards for environment, health and safety; and access for people with special needs are defined and implemented

NLU, the average floor area is approximately 3.4 m^2/student, which meet the requirements of the Circular No, 30/2020/TT-BGDĐT signed on Feb 10, 2020 [Exh. 2.9.5.a]. A workroom is 10m^2, or 3 m^2 for a staff. The workrooms that are arranged for leaders of specialized units are 23 rooms with 452.84 m^2. The workrooms are also arranged for academic staff and secretaries, who work faculties/departments. NLU currently has 06 dormitories in 5 ha campus, with a total floor area of 27,787 m^2. The dormitory has 411 rooms with a capacity of 3,875 beds [Exh. 2.9.5.b]. The dormitory of the NLU has met the standards of Circular No 30/2020/TT-BGDDT is: 4m^2/student.

Sports stadium was invested in modern construction with a total area of 3,320 m^2, creating conditions for students to participate in training and competing in many kinds of sports [Exh. 2.9.5.c]. NLU spends an area of about 18,732 m^2 to accommodate the outdoor sports ground for the sport events and to invest in 06 artificial grass courts, the area for standard running roads and auxiliary works in campus is 10,200 m^2 for exercises in 2018. In addition, NLU also has sports ground areas located within the dormitory campus, multi-field, volleyball court, etc. With the existing field system, the school has met the living and entertained needs for the students.

As far as health care is concerned, students can participate in national health insurance according to school regulations. At the beginning of the course, students are given a physical examination before enrolling. Students can use medical services free of charge from the medical room with 01 doctor. 100% students are checked for health and have health insurance. NLU is 2.3 km from Thu Duc General Hospital, and 7.7 km from Thu Duc District Hospital. It does not take time to arrive in these hospitals for accident cases and for treatment of issues related to student health. NLU organizes periodic health examinations for lecturers and staff once a year by a reputable medical facility.

For safety, NLU has security division consisting of 19 persons who are on duty 24/24 hours [Exh. 2.9.5.d], for safety and in accordance with the Decree No, 06/2013/NĐ-CP. NLU has established the Fire Protection System with the task of checking the implementation of compulsory

fire and explosion at the units [Exh. 2.9.5.e]. In 2014, the school adjusted the functions and tasks of the Fire protection system in accordance with the provisions of Decree 79/ND-CP dated July 31, 2014. Each laboratory or lecture hall is equipped with fire protection, internal rules and troubleshooting procedures. To ensure safety and firefighting, the NLU regularly checks, replaces and repairs firefighting equipment for work, ensuring safety and promoting maximum efficiency when using. The members of the security team and the Fire protection system team have participated in annual professional training sessions [Exh. 2.9.5.f]. NLU also established a Technical Safety Committee - labor protection with functions and duties implemented in accordance with Circular 25/TT-KHKT dated 01/12/1992.

For EE students, most activities such as "self-study", research introduction, practical learning, and Youth Union activities are conducted mainly in Zone T. Area management is based on Regulations and rules of the FENR. The safety system of faculty is including 4 emergency boxes, 2 fire prevention instruction board and emergency signs [Exh. 2.9.5.g]. Laboratories are with adequate light, clean water, ventilation fans, toxic fume hoods or air conditions. All of that is to form a scientific environment with related works and multi- dimensional interactions between “students – lecturers”. The FENR has developed a procedure for the separation of laboratory waste and waste recycling. In which, 100% of the laboratories have proper waste bins, separate recyclable and non-recyclable waste and weekly cleaning schedule [Exh. 2.9.5.h]. All students/lecturers follow the regulations; no eating and drinking are allowed in the laboratories, troubleshooting processes and standard operating procedures are clearly documented [Exh. 2.9.5.i].

2.10. CRITERION 10 - QUALITY ENHANCEMENT

2.10.1. Stakeholders’ needs and feedback serve as input to curriculum design and development

The EE program was first established in 2001 and underwent 4 modified versions. NLU and DET always focus on the development and supplementing the training program to meet the demand of the society. The feedback of stakeholders, the regulations of MOET, NLU’s and DET’s mission and vision are used as the basis for adjustment and modifying of training programs. After careful consideration of the requirements of the labor market the curriculum was modified significantly in 2014, 2018 and now 2020 from the original 2008 version [Exh. 2.10.1.a].

DET has collected the feedback from students on teaching activities at the time of graduation or from new students on awareness and understanding level about the field of study [Exh. 2.10.1.b]. DET has established the Alumni Association with its own Facebook to receive the feedbacks and to update the information of DET’s education and research activities [Exh. 2.10.1.c]. The employment’s feedback is received from newly graduated alumni after six, and twelve months to upgrade the curriculum such as adding the course of professional English skills and of Research skills (version 2018) and then increased credit for important or needed courses in version 2020.

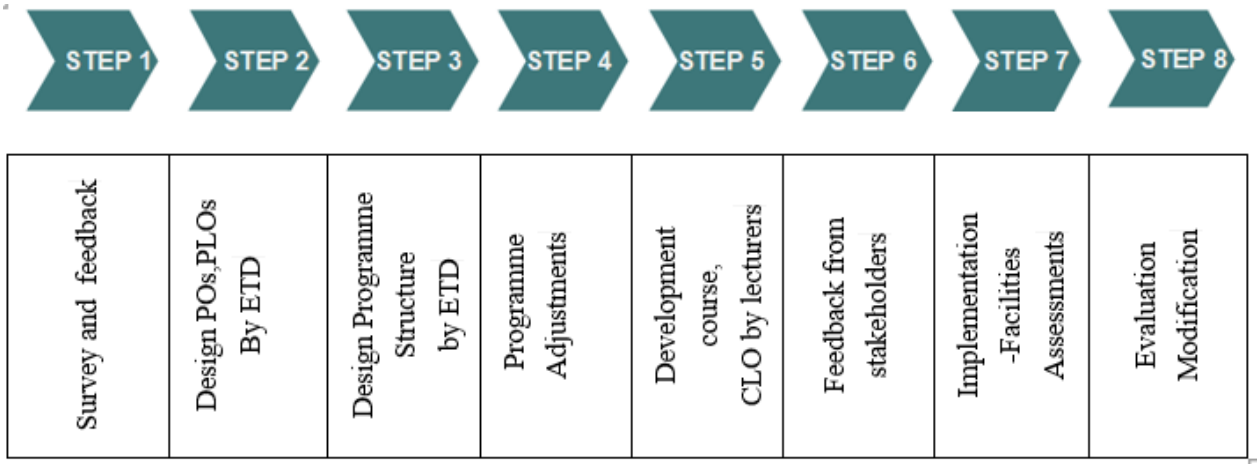
The training program has changed most clearly from 2014, 2018 and 2020 [Exh. 2.10.1.d]. The soft skills are enhanced through teaching and practicing the skills such as report, presentation, explanation, professional work styles that are integrated into the courses, and enhanced through special seminars conducted by experts/employers/lecturers. The EE program 2018 has been reviewed on the program objectives, PLOs for curriculum development, focusing on knowledge, skills, responsibility and self-orientation.

2.10.2. The curriculum design and development process are established and subjected to evaluation and enhancement

The curriculum design and development process is established according to MOET’s decision, NLU’s requirements, and stakeholders’ needs, at least once in every 4 years (versions 2008-2010-

2014-2018). Curriculum design is formulated by the academic staff of DET. It is approved by NLU's scientific and training council, and it is approved by NLU's president. During its 20 years of development, the program has undergone 4 revisions following evaluation and enhancement processes. The 2008 curriculum was revised from 2001 with a fixed academic system (222 modules) being replaced by a credit system with 143 credits (version 2008) and modified to the final version 2018 with 136 credits, which is used since the academic year of 2018.

The process used for the programme development is as follows



2.10.3. The teaching and learning processes and student assessment are continuously reviewed and evaluated to ensure their relevance and alignment

The teaching and learning process is managed on a strict schedule, which is published on the AAO website. It is supported by the Quality Management Office and checked by the Legality Office. Workload distribution for teaching and learning activities

(i) Lecturers have to complete a teaching plan for each semester, based on the curriculum [Exh. 2.10.3.a]

(ii) Teaching schedule is worked out for full-time or visiting lecturers,

(iii) Time schedule for lab-work and booking teaching rooms must be arranged,

(iv) Arrangement is made for public announcement of the Time schedule for lecturers and students,

(v) Arrangement is made to organize exams and marking exam papers,

(vi) Relevant academic service is provided for students, and

(vii) Inspectors are assigned to ensure learning progress and the teaching schedule is observed on time [Exh. 2.10.3.b]

Quality teaching and learning are affected by active engagements of students in different learning methods as shown in **Table 23**.The assessment methods have moved from direct and indirect assessments in the past to experiential, interactive, and independent assessments recently. The validity, reliability, and consistency of the system help the students to motivate themselves during the study.

The assessments of learning outcomes and attitudes are shown in the outline at the beginning of the semester with assessment method, weighting, and timeline. Examinations are carried out in accordance with NLU's test rules and the MOET's regulations [Exh. 2.10.3.c]. The student assessments always follow a predetermined process and along with this, the employer's assessment

is also carried out at the end of the fourth year based on internship reports and thesis presentation [Exh. 2.10.3.d].

Table 23. Activities upgrading the quality of teaching and learning

Methods	Descriptions	Activities
Direct learning	Class/Labs/Practical Labs, Lecturers– Students, face -to - face	Presentations, team works, technical works, answers - questions
Indirect learning	Outside of class, Lecturer– Students, Advisors - Students	E-learning, email, practical reports, seminars
Experiential learning	Outside of University, outside of class	Research, study tours, seminars, net house activities
Interactive learning	Outside of university, outside of class, foreign countries	Research, study tours, internships, seminars, presentation
Independent learning	Outside of university, outside of class, foreign countries	Internships, Thesis working, self-study

2.10.4. Research output is used to enhance teaching and learning

Scientific research is always enhanced to improve the quality of education through teaching materials that are updated with research results, practice models, and students' professional skills. DET has always been oriented to encourage teaching staff and students to participate in projects and research topics.

The lecturers actively participate in scientific research, which has contributed to solving specific problems in the field of environment. At the same time, we have created realistic waste treatment models for teaching, improving the efficiency of the learning process, gaining more knowledge and practical experience to improve courses and guiding students. researcher [Exh. 2.10.4.a]. At the beginning of 2019, the Faculty established a scientific research club to increase support for students to participate in scientific research under the direction of faculty members in the faculty [Exh.2.10.4.b].

For students who participate in scientific research, they are guided by faculty in the subject and have many registered topics over the years [Exh. 2.10.4.c]. Through research, students can learn methods to solve problems in research as well as in real life, helping to build active study and work skills. Under the guidance of the lecturers, the research projects have won awards such as Eureka, ... [Exh. 2.10.4.d].

2.10.5. Quality of support services and facilities (at the library, laboratory, IT facility and student services) is subjected to evaluation and enhancement

The quality of facilities is audited annually and renewed according to the regulations of FENR, signed by the President. In urgent cases, the Property Management Office comes into action immediately according to the reports from Units/offices/Labs. Evaluation of facilities and support services is carried out annually based on the feedback of staff, students, and lecturers. With orientation “socialisation”, as many as laboratories, facilities, and equipment have been installed and expanded [Exh. 2.10.5.a]. For enhancement, NLU has contracted and performed the blackboard and e-learning system, the Center for Foreign Studies has been upgraded, and the library has been

renewed. This shows that the quality of teaching and learning is being upgraded [Exh. 2.10.5.b]. The library will also pay special attention to the supplemental textbook, especially e-Book reference materials to meet the academic and teaching needs of faculties and students [Exh. 2.10.5.c]. A new building with 9,898 m² area, Thien Ly, is reserved for administrative and functional offices/units, as well as for 01 bank office, and 6 conference rooms. This arrangement makes it easy for students in learning and academic activities. Internal bulletin is a new way to deliver the new information to students, lecturers, officers, and others. Besides that, Facebook is an easy way for sharing the information and collecting the feedbacks.

Scientific journal of NLU has been replaced by a new name "Journal of Agriculture and Development" to support the lecturers and students publishing the research results in English. The paper is submitted online with confidence and easy work, and is reviewed by well-known scientists [Exh. 2.10.5.d].

2.10.6. The stakeholder's feedback mechanisms are systematic and subjected to evaluation and enhancement

The feedback and comment collected from stakeholders is systematically established, evaluated, and quality enhanced. QMO, and AAO are organising the feedback collected from lecturers, students, alumni and employers through various forms such as questionnaires, communication, interview and so on [Core Exhs. 9.I.4 and 5]. Results are analyzed and reported to related units/departments/faculties, and suggestions on procedures of quality improvement have been done (**Table 24**).

With the employers, the FENR has signed cooperation agreements with many organizations, centers and companies for educational activities in a win-win way [Exh. 2.10.6.a]. After the internship, the employer evaluates the quality of the students; ability to meet workload, skills and knowledge, attitudes, strengths, and weaknesses. The results are analyzed on the current situation and trends, on that basis, the Scientific Council of the Faculty/Department will develop a plan to adjust the content of the courses.

Table 24. Stakeholders' feedback and analysis mechanism conducted by QMO, AAO

STAKEHOLDER FEEDBACK			
STUDENTS	**ALUMNI**	**STAFF**	**EMPLOYERS**
• Teaching and Learning methods • Student assessment • Student supporting services • Facilities • Co-curriculum	• Curriculum • Employment rate • Supporting services • Internships • Thesis evaluation	• PLOs • Curriculum • Teaching and Learning methods • Working environment • Supporting services • Student attitudes	• Graduate quality • Internship • Thesis evaluation • Co-curriculum

With staff, DET receives direct feedback on student assessments, teaching and learning facilities, research funds, communication channels, and environmental conditions. In addition, lecturers can give ideas to improve the program in the staff conferences at the end of the school year [Exh. 2.10.6.b]. The rate of feedback of stakeholders by the following ways

(1) Get feedback online

(2) Using PDCA to solve latest problems

(3) define goals and check data reliability

For students, DET periodically provides feedback on teaching and service quality each semester or year. For courses that are considered “unsatisfactory” by many students, DET leaders will meet with relevant lecturers to identify the problem and work together to find a solution. As a result, some courses have been modified or combined with other courses by reducing the number of credits in one course or increasing the number of credits in another as in the 2018 edition.

Recommendations from alumni are also valuable information for the quality improvement process. Every year on Vietnamese Teachers' Day, the Faculty and DET organize alumni meetings, exchanges between alumni and students to grasp the actual needs of students and collect opinions from alumni. Students who have just graduated after 6 months will be surveyed for job satisfaction and supplemented with skills and knowledge in the program [Core Exh. 9.I.3 and 5].

2.11. CRITERION 11 - OUTPUT

2.11.1. The pass rates and dropout rates are established, monitored and benchmarked for improvement

Average 50% of EE students complete the program (graduation from 2016 - 2018) [Exh. 2.11.1.a]. This result is evaluated based on (1) completion of graduation project/graduation thesis, (2) cumulative GPA ≥ 2.0, (3) total cumulative credits ≥ 136 credits, (4) meet the English output standard B1, and (5) meet the computation output standard (basic and advanced) [Exh. 2.11.1.b]. The rate of students dropping out of academic each year is established (**Table 25**). The drop-out rate varies from year to year, the main reason is due to (1) change in study orientation such as changing majors, changing institutions, retaking university entrance exams; (2) personal reasons leading to failure of some courses, and (3) English proficiency. In 2012, alot of student registered in EE but they dropouted during 8 years resulting in the reduction of graduate rate. The Faculty/Department is always looking for solutions to help students such as providing scholarships/part-time jobs, promoting English learning from the first year, announcing academic warnings every semester, enhancing the role of consultant. The percentage of students who graduated in 4 years was 26.7%, while the percentage of students who graduated late was more than 19.2% (**Table 25**).

Table 25. Rate of passing and dropping out for Environmental Engineering in the last eight years

Academic year	Cohort size	No. of student completed first degree in and percentage rate			
		Within 4 years		> 4 years	
		Student	%	Student	%
2015 - 2016	283	46	16.3	14	4.9
2016 - 2017	162	79	48.8	33	20.4
2017 - 2018	77	29	37.7	17	22.1
2018 - 2019	156	39	25	36	23.1
2019 - 2020	70	4	5.7	18	25.7

2.11.2. The average time to graduate is established, monitored, and benchmarked for improvement

The EE program with 136 credits (2018 version) allows students to complete the course in 3.5 years (few studnent can graduate in short time), in 4 years (26.3% in 2016 - 2020) and 15.8% exceeds 4 years (academic year 2016 - 2020). The results show that the program structure is satisfactory, allowing students to finish their studies within 8 years, and excellent students to graduate within 3.5 years (only 2 students in academic year 2013 – 2017). Student registerd in EE

was about 150 people/year [Exh. 2.11.2.a]. However, students participate in a difficultly engineering program, they might have some troubles in studying. After 8 years, if student cannot graduate, it means that student is in dropout. Therefore, from 2018 – 2020, we are not able to determine the dropout student resulting in the delay student. This evidence shows that the credit program impacts the quality as well as the quantity of EE students (**Table 26**).

Table 26. The length of study and pass, dropout, and delay rates in the last five years

Academic year	Cohort size	Length of study (year) No. of graduate student					Pass (%)	Drop out (%)	Delay (%)
		4	5	6	7	8			
2012 – 2016	283	46	12	2			21.2	78.8	
2013 – 2017	162	79	22	9	1	1	67.9	32.1	
2014 – 2018	77	29	14	2	1		58.44		41.56
2015 – 2019	156	39	29	7			48.08		51.92
2016 – 2020	70	4	18				31.43		68.57
Sum	**748**	**197**	**95**	**20**	**2**	**1**			
Average	**150**	**39**	**19**	**5**	**1**	**1**	**45**		

Students in Environmental Engineering tend to extend their study time more than 04 years, because students take longer to complete their graduation thesis. Students also take a long time to complete the computation and foreign language output standards. The Student Support Center and Bussiness Relationship, the Student Affairs Office and the Faculty's Student Assistants always work together to provide the best physical and emotional support for students [Exh. 2.11.2.b].

2.11.3. Employability of graduates is established, monitored and benchmarked for improvement

Survey results show that 17.2% have jobs before graduation, 72.4% of graduates have jobs after 0-3 months, 3.4% of graduates have jobs after 3-6 months and 6.9% of students got a job after 06-12 months (**Figure 6**). It should be noted that graduates sometimes leave their jobs due to (1) changing jobs, (2) pursuing graduate studies, and (3) studying for a second degree or another complementary knowledge. Working positions in the field of EE are recorded, an overall of 58.6% are in the environment, 13.8% are close to the environment, and 27.6% are for other industries (**Figure 7**). The survey results also show that the knowledge and skills trained meet the requirements of employers and graduates are well suited for the job [Core Exh. 9.I.5].

In order to help students, find jobs after graduation, FENR regularly posts recruitment information on the Faculty's Fan page on Facebook [Exh.2.11.3.a]. In addition, in the Faculty's Facebook Group, there are also many recruitment messages from alumni and businesses [Exh.2.11.3.b]. On the other hand, information about internship programs at domestic and abroad, in private enterprises as well as in international organizations is also posted on the Faculty's Fan page on Facebook. In addition, short courses and programs to improve students' professional capacity and soft skills are also regularly posted on the Faculty's Fan page [Exh.2.11.3.c].

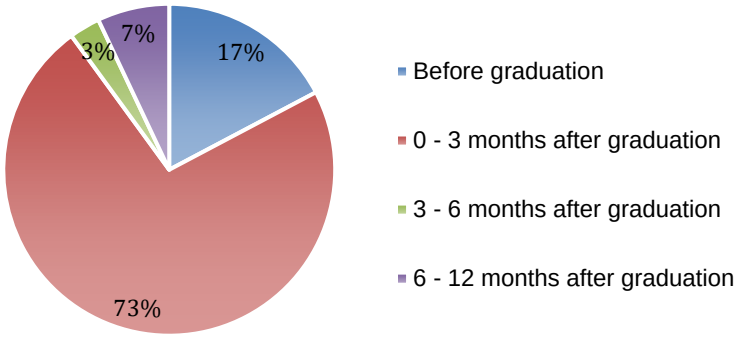


Figure 6. The percentage of students having jobs after graduation.

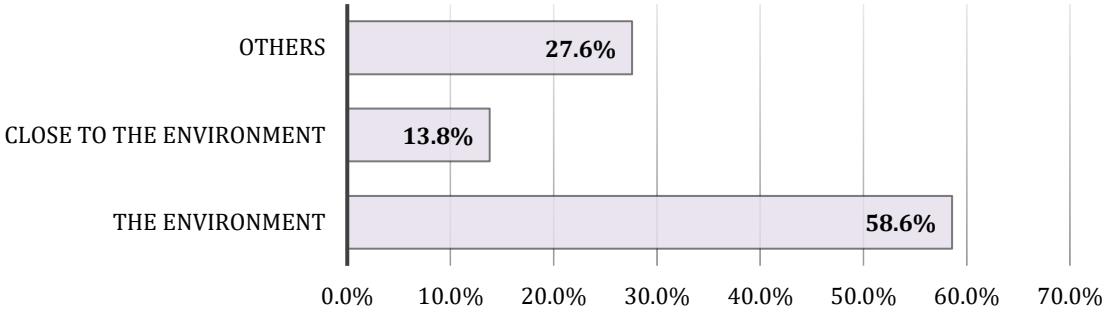


Figure 7. Careers students do after graduation.

2.11.4. The types and quantity of research activities by students are established, monitored and benchmarked for improvement

Student research is valued and encouraged (1) for the purpose of producing skilled engineers, and (2) to ensure that the engineering field encompasses both innovation and technological expertise. The results of the research are used to (1) award points for the thesis, (2) participate in scientific awards and scholarship [Exh. 2.11.4.a], (3) commercialize research products [Exh. 2.11.4.b], (4) writing scientific articles [Exh. 2.11.4.c], (5) transferring technology. Some research models have been applied in practice such as domestic wastewater treatment models for apartments, hotels, etc. [Exh. 2.11.4.d].

Students' scientific research activities take place regularly and continuously with the aim of creating an intensive academic environment so that students can freely create, form ideas, and implement their own research ideas. Every year, students of the FENR register to conduct 5-7 scientific research projects. The research topics focus on the field of environmental research, in which the technical sector accounts for most scientific research topics among students. Scientific research topics related to environmental engineering focus on research on environmental pollution (soil, water, air) and research on technology to treat environmental pollution. Funding sources for environmental research activities range from 50 million to 130 million VND/year allocated to topics (**Table 27**). The average number of students participating in scientific research is 3 students/topic.

In scientific research, in addition to applying works to practice, students also develop further research orientations when they go to higher levels or go abroad to study. The research works also won certain awards when participating in the consideration of awards at university and ministerial level. A number of works won prizes for scientific works of the Ho Chi Minh City Youth Union (Student's scientific Award) [Exh. 2.11.4.e].

Table 27. Research achievements of Environmental Engineering students (2015-2020)

Academic year	NLU funds (Mill. VND)	Other funds	No. of students joined	National scientific paper	Awards
2015 - 2016	52	0	17	5	1
2016 - 2017	87.5	0	23	6	2
2017 - 2018	123.1	0	24	7	0
2018 - 2019	92	0	18	5	0
2019 - 2020	133	0	18	6	2
Total	**487.6**	**0**	**100**	**29**	**5**

The number of research projects conducted by students also increased as students had more research time, as well as increased scientific research funds for students (**Table 27**). Every year, Environmental Engineering students receive many awards in their scientific research activities. The quantity and quality of research on student scientific research projects are conducted and supervised by the NLU's Scientific Research Management Office, the Faculty's Science Council and the faculty's instructors. **Table 28** shows that instructors are experts in the environmental field, with at least a master's degree. Research achievements of students majoring in Environmental Engineering contribute to the vision and mission of Nong Lam University, is an international quality research university.

Table 28. Quality of supervisors for the conducted thesis

Supervisor's degree	Bachelor	Master	PhD	Assoc. Professor	Professor
2015 - 2016	0	5	1	1	1
2016 - 2017	0	6	2	1	1
2017 - 2018	0	6	3	1	1
2018 - 2019	0	5	3	2	1
2019 - 2020	0	5	3	2	1

In general, the scientific research of students is always encouraged and promoted during their studies at the University and at the Faculty. Scientific research creates a good premise for students to have valuable experiences in their own professional development later.

The teaching staff guides students to carry out their graduation thesis and carry out scientific research projects that have been improved over time. From 2016 up to now, there are no longer lecturers who are engineers, but most of the lecturers have master's and doctorate degrees relevant to their training majors. The quality of the teaching staff has improved, leading to the improvement of the quality of scientific works in line with the trend of regional and international integration. The scientific research works of students gradually approach the quality of international research works, which is reflected in international articles published in specialized scientific journals.

The teaching staff must gradually improve their training standards from master to doctorate through domestic and international training programs. It is urgent to improve the contingent of lecturers in training in the current period to create high-quality human resources in accordance with the requirements of society's development and international integration.

2.11.5. The satisfaction levels of stakeholders are established, monitored, and benchmarked for improvement

For Student's sastifaction [Core Exhs. 9.I.1 and 5]

Survey result shows that students are satisfied (over 80%) with the equipment for teaching of EE. The classrooms and lecture halls are suitable for teaching theory, the classrooms and thematic

reports at the faculty are suitable for studying and working in groups, making thematic reports of students.

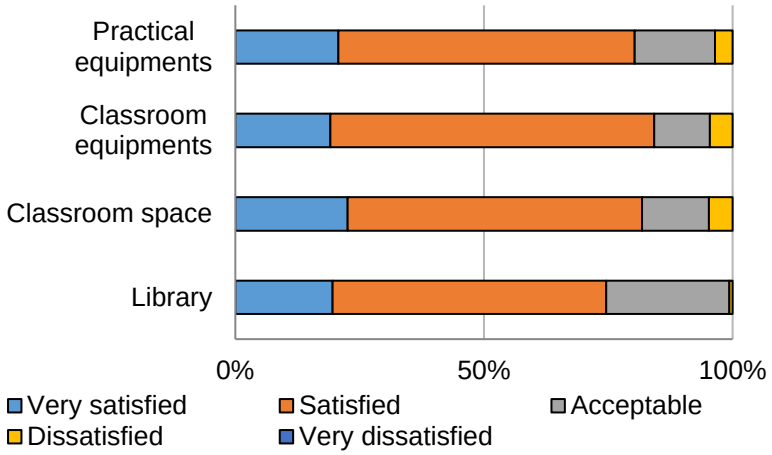


Figure 8. Student's satisfaction with facilities.

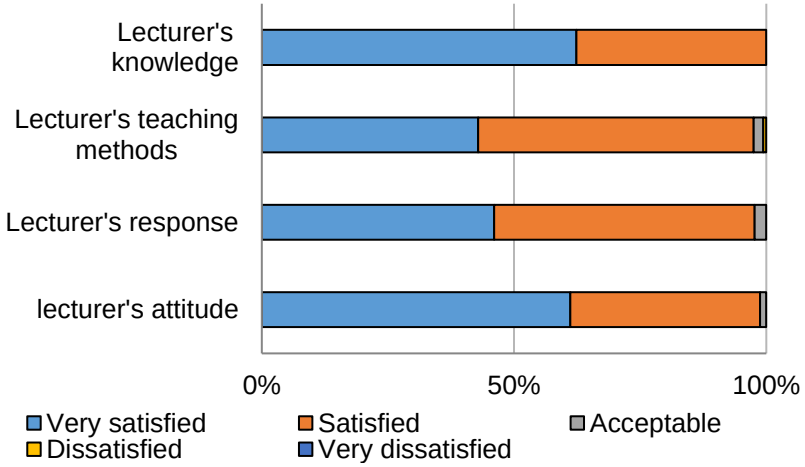


Figure 9. Students' satisfaction with teaching methods and knowledge of lecturers.

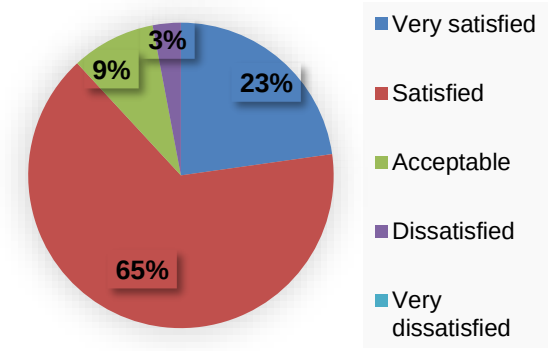


Figure 10. Student's satisfaction rate in general.

In terms of student satisfaction with lecturers and teaching methods, knowledge transfer is highly appreciated by students (over 98% satisfied and very satisfied). The lecturer's knowledge as well as the lecturer's knowledge transfer, the lecturer's attitude towards students reached a very

satisfied level (over 60%). It shows that lecturers always improve teaching methods, popularize new knowledge, especially the attitude of lecturers is important to students in imparting knowledge, creating passion. careers for students in learning and research, creating a driving force for students to be creative and create research works that are meaningful to EE.

In general, current students are satisfied and very satisfied with the teaching staff, with the methods of teaching, imparting knowledge, training skills, and spreading career passion to students.

For Alumni's satisfaction [Core Exhs. 9.I.3 and 5]

Regarding the satisfaction of alumni, statistics show that the knowledge gained during the study of environmental engineering can meet the requirements of the student's job after graduation (97%). In addition to the knowledge that meets the requirements of the job, after graduation, students are also satisfied with organizational skills, leadership skills (99%), teamwork skills (96%). It shows that, when students study environmental engineering, in addition to gaining knowledge to meet future job needs, students also have more soft skills to improve their self-development orientation. students, meet the changing requirements of society, develop themselves more and more on their own path to success. With the knowledge gained at the university level, most students can meet further study in the graduate level towards a professionalization in the profession, especially the learning and in-depth research aimed at a developed science and technology in line with the development orientation of the world.

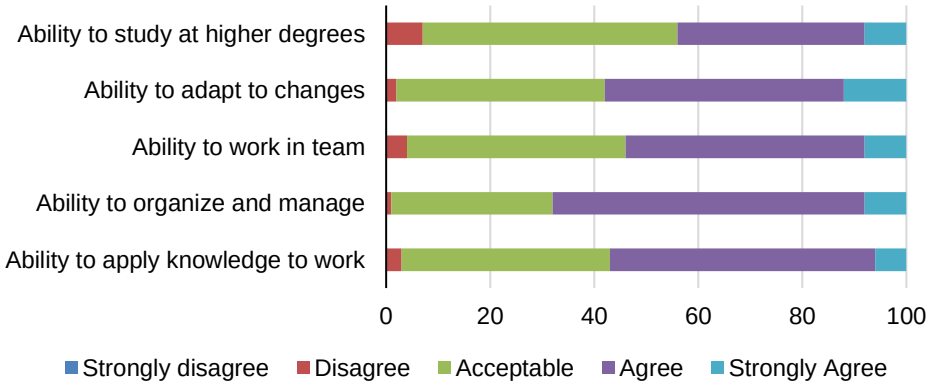


Figure 11. Alumni's satisfaction with the career after graduation.

With the survey results, alumni can identify that Environmental Engineering has been training in the right direction of basic and advanced careers. Graduates not only meet the increasing requirements of society in the field of environment, but also can develop themselves, complete career guidance and assurance on their own career development.

For Employers' satisfaction [Core Exhs. 9.I.4 and 5]

For the curriculum of EE students, businesses and employers feel satisfied with the knowledge blocks: basic, specialized (75%). Survey result confirmed that the EE curriculum meets the requirements of the job market and the knowledge learned at the university can be applied and deployed in practice as soon as students graduate.

In terms of soft skills that students are equipped or equipped with during training, they play a key role in students' career development after graduation. Employers consider soft skills as a factor to create student success. However, skills related to the training profession are foreign languages (25% satisfaction level) but are not highly appreciated by employers. However, this skill can be further trained while working at the recruitment agency. For attitude, professional ethics, good working style, students are highly appreciated by employers for this skill (75%).

Overall, students are rated well in real-time at the enterprise. However, some soft skills need to be further improved after graduation such as teamwork, presentation, negotiation. In addition, students need to be supplemented with English in communication. Next, in intensive learning, advanced learning in the trend of globalization. This is considered the key to success in the future, whether students can access advanced and modern science, foreign language skills are important. Students need to be proficient in the use of computer programs and supporting software in the design of waste treatment works. At the same time, students also need to have soft skills in communicating with customers.

For satisfication with supporting staffs

During the training process, staff plays an essential role in student activities such as consulting, processing records, assisting students in accessing faculty and faculty. In some cases, support staff solve problems related to course registration, review and check the difference of accumulated points, support students with tough economic conditions to be able to access scholarships and part-time jobs. Survey data from 2018 to 2021 shows that students are satisfied with the support staff with more than 85%. Specifically, for academic advising work is 85.7%; for the staff to support and advise during the study process of students at the Faculty, nearly 90%; for the activities of staff of the training department in solving student's academic problems is 86% (**Figure 12**) [Exh. 2.11.5].

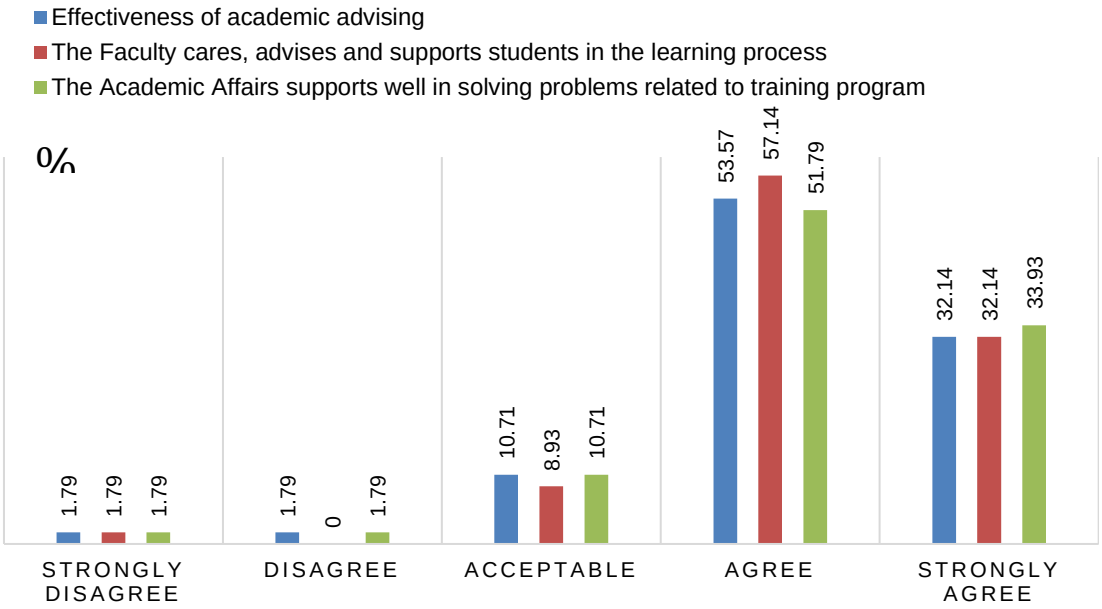


Figure 12. Student supporting activities.

However, some students are not really satisfied with the support staff, this rate is about 3%. When asked why they are not satisfied with the support staff, students said that they face certain difficulties in registering for courses without practical advice, or students may not be able to be interested in receiving advice from the student's academic advisor for the 2015 - 2019 school year. This situation has been rectified for the following years.

PART III. STRENGTHS AND WEAKNESS ANALYSIS

3.1. Criterion 1: Expected Learning Outcomes

Strengths	Weaknesses	Improvement plan
POs and PLOs are built according to the visions and strategies of Nong Lam University - Ho Chi Minh City.	The POs, PLOs of the e-learning program have not been built according to the standard process	Revise the POs and PLOs following standard processes
POs and PLOs were developed corresponding to stakeholders' demands and feedbacks	Feedbacks on the program were not received from a truly diversified stakeholder	Reach out to other stakeholders to obtain feedbacks: companies established by alumni, or recruited graduated students of the EE program, alumni from different entrance years.
Building course curriculum compatible with PLOs	The program took into account similar programs provided by other universities, but the effectiveness and appropriateness of the referenced programs have not been evaluated.	Assess the compatibility and effectiveness of relevant programs that are being provided elsewhere, especially the oversea ones.
Student's satisfaction was assessed every semester	The conducted surveys are not sufficient to improve the educational quality.	Collect and complement evidence to evaluate students' satisfaction.

3.2. Criterion 2: Program Specification

Strengths	Weaknesses	Improvement plan
Building course curriculum following the approved program	Course outlines are still not fully compatible with the teaching process and assessment of learning outcomes	Adjust and unify the course outline
	The skill matrix has not been specifically built	Revise the skill matrix to match the output standard
	The program has not been disclosed to related parties: students, former students, enterprises	Deliver outline of the curriculum for stakeholders through website, Facebook, fan page, …
The curriculum is built based on the synthesis of comments from the Stakeholders	Lack of evidence of input from a variety of stakeholders: businesses have and can employ EE students, alumni	Collect additional evidence from a wide range of stakeholders

3.3. Criterion 3: Program Structure and Content

Strengths	Weaknesses	Improvement plan
The curriculum is revised every 2 years	Lack of sufficient evidence for improvement of curriculums.	Collect meeting minutes during curriculum improvement
Course outlines are improved in accordance with the revised curriculum	The matrix of subjects for each semester is not specific, cannot show the weighting of each subject	Specifically evaluate the weights in the matrix table
The structure of the curriculum clearly shows the relationship and progression of basic and specialized courses	Lack of evidence comparing the curriculum with similar program to help further revise the curriculum and course outlines	Collect additional evidence

3.4. Criterion 4: Teaching and learning Approach

Strengths	Weaknesses	Improvement plan
Teaching and learning activities are conducted in many forms: theoretical teaching in class, projects, business internships, experiments.	Teaching and learning methods are not synchronized	Organize curriculums to help lecturers improve their teaching skills and methodologies.
Teaching and learning activities help achieve the expected learning outcomes	Lack of evidence evaluating students' achievement according to POs, the mission and vision of the program	Collect additional evidence from alumni
Teaching and learning methods encourage students to self-study and learn from each other	Not enough evidence from graduation surveys	Establish annual survey of graduating students

3.5. Criterion 5: Student Assessment

Strengths	Weaknesses	Improvement plan
Students are tested and assessed capacity in each course	Not yet assessed the suitability of each subject for the output standards	The Heads of Departments develop the assessment process and notify each lecturer in charge of the subject for assessment
Each course has different assessment methods: multiple-choice exam, oral exam, graduation report, essay exam...	Not yet established rubrics for all courses	It is necessary to develop and use Rubrics in student assessment across all courses

Evaluation surveys were conducted for each course	Learner feedback has not been fully incorporated in improving courses	Develop a procedure that considers students' comments and feedback to adjust course contents
The complaints and appeals procedures are easily accessible to students	There are not enough detailed answers for each of the students' feedbacks	Lecturers develop detailed answers for each student assessment and are ready to respond to complaints and re-examination requests.

3.6. Criterion 6: Academic Staff Quality

Strengths	Weaknesses	Improvement plan
Lecturers can meet the requirements of learning, teaching and evaluating students	Some classes have too many students enrolled, making it not possible to make a detailed and clear assessment, and to understand the learning style of each student.	Limit the maximum number of students enrolled in each class to 40
Lecturers carry out scientific research and provide professional services to stakeholders	Statistics of research projects are incomplete	Review and documents all scientific activities within FERN and DET within the last five years

3.7. Criterion 7: Support Staff Quality

Strengths	Weaknesses	Improvement plan
Support Staffs are highly qualified and regularly recruited to meet the job positions	There is no communication channel between faculty and service staff	Building communication and feedback channels between lecturers and service staff (receiving room, dealing with related issues)
	KPIs for support staffs have not been developed yet	Develop a process for evaluation support staffs
	No specific authority – responsibility for each job position	Design job descriptions for each position

3.8. Criterion 8: Student Quality and Support

Strengths	Weaknesses	Improvement plan
Each class has 1 academic advisor to support students	Not synchronized in supporting students between different advisors	Each academic advisor develops and implements a student support plan in each school/year
Organize various academic consulting, knowledge exams,	No regular activity plan yet	Plan and organize learning support activities

extracurricular activities to support learners		
	The internship modules have not been effective, some companies have difficulty in creating conditions for students to practice	Signing MOU for research and science transfer with a wide range of corporates
	There is no process to save official documents, decisions, plans, documented companies students come to practice	Save official documents, decisions, plans, create a database of companies that students have interned for.
Learning environment in green, quiet, and beautiful space	The learning environment of students has not been standardized	Building a good learning environment (close, sociable) in a green, clean, beautiful space.

3.9. Criterion 9: Facilities and Infrastructures

Strengths	Weaknesses	Improvement plan
New laboratory meets learning and research needs	Lack of equipment to help students further improve their technical skills	Design and find external resources to help building new labs
Facilities and teaching equipment are complete and up to date	The common space for lecturers has not yet been established	Create a working and resting space for support staffs and lecturers

3.10. Criterion 10: Quality Enhancement

Strengths	Weaknesses	Improvement plan
The program is built based on the comments of the Stakeholders	Feedbacks on the program were not received from a truly diversified stakeholder: companies that was established by alumni, or recruiting graduated students, alumni from different entrance years	Reach out to other stakeholders to obtain more feedbacks
The curriculum is revised every 2 years	Lack of sufficient evidence for improvement of curriculums.	Collect meeting minutes during curriculum improvement
Many scientific activities of teachers and students have been carried out	Scientific research results and experimental models are not fully documented	Collect the statistics of scientific research conducted in the last 5 years
Learning facilities were invested to improve learners' experiences	No student survey conducted to evaluate the quality and appropriateness of	Design and conduct a facility survey each year

	facilities (library, laboratory, student support services)	

3.11. Criterion 11: Output

Strengths	Weaknesses	Improvement plan
The quality of graduates meets the needs of the Stakeholders	There has been no activity to assess the quality of students' outputs to overcome and improve the quality of the output standards	Develop a plan to evaluate the effectiveness of the program's outcomes: pass rate, dropout rate, average time to graduate, career capacity... Compare with equivalent programs at other universities to adjust and improve the PLOs
Students participating in scientific research	Lack of evidence showing the relevant of PLOs with requirements of Stakeholders	Comparing scientific research with other universities and the needs of Stakeholders

PART IV. APPENDICES

Appendix 1: Program specification [Core Exh. 9.c.1]

Part I. General information of the program

1. Program title: Environmental Engineering (EE)

2. Awarding and teaching institution: Nong Lam University, Ho Chi Minh City

3. Degree: Engineering in Environment

4. Study mode: full-time, on campus

5. Training time: 4.0 years

6. Admission criteria

High school graduates must pass the National High School Graduation Examination which is held by MOET around end of June every year. They must have the total score of groups of subjects equal or higher than the cut-off level set by NLU based on the admission quota of MOET. Those groups of subjects are: (1) Mathematics, Physics and Chemistry (group A); (2) Mathematics, Physics and English (group A1); (3) Mathematics, Chemistry and biology (group B); or (4) Mathematics, Chemistry and English (group D7). The cut-off level is announced in August annually.

Part II. Program objectives and expected learning outcomes

Program objectives

The program objectives of the Environmental engineering program are as follows.

- PO1: Forming a solid foundation of general education knowledge and basic knowledge of Environmental Engineering
- PO2: Proficient use of self-study skills, problem solving skills and professional skills and creative thinking in research, design, and operation of waste treatment and resource recycling systems
- PO3: Effective communication, organization, leadership and teamwork
- PO4: Make good use of brainstorming capabilities: planning, implementing and evaluating
- PO5: Capable of grasping social needs, well performing social responsibilities and professional ethics

Expected learning outcomes

Upon completion of the program of Environmental engineering, students are able to:

A. KNOWLEDGES

Based on the minimum requirement of knowledge that learners must acquire after graduation, the curriculum of EE workload is categorized into Program Learning Outcomes (PLOs) and divided into 2 groups:

1. **General knowledges:**
   a. PLO 1: Applying basic knowledge of atmospheric, soil and water environment into EE
   b. PLO 2: Applying knowledge in collecting data and analyzing impacting factors
2. **Professional knowledge**
   c. PLO 3: Applying and analyzing material transforming reactions in the environment
   d. PLO 4: Applying skills in waste treatment
   e. PLO 5: Understand and be able to apply law, regulation, and standards in environmental and resource management
   f. PLO 6: Be able to explain event and phenomenon occurring in the environment

B. SKILLS

1. **General skills**
   g. PLO 7: Effective communication
   h. PLO 8: Proficient use of English
2. **Professional skills**
   i. PLO 9: Applying research skills on issues related to waste treatment in the environment
   j. PLO 10: Applying skills on computing, designing experimental models and piloting models to choose optimal parameters
   k. PLO 11: Applying skills in operating waste treatment systems in reality
   l. PLO 12: Applying knowledge of environmental laws and policies to waste treatment works

C. AWARENESS AND ATTITUDES

1. **Awareness**
   m. PLO 13: Emphasize on social responsibility
   n. PLO 14: Emphasize on responsibility for the environment and resources
2. **Attitudes**
   o. PLO15: Compliance in communication and behavior
   p. PLO16: Be respectful to everyone

PROGRAM OBJECTIVES AND CORRESPONDING PROGRAM LEARNING OUTCOMES

Table 1. Categorization of curriculum learning outcomes

POs	PLOs															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																

- *PLO 01, 02, ..., PLOs: PLO of Training program*
- *POs: Program objectives.*

General knowledges	**Professional knowledge**	**General skills**
Professional skills	**Awareness**	**Attitudes**

Part III. Program structure and curriculum

Program structure

Group	Credits		
	Compulsory	Elective	Total
Basic Knowledge	37	4	41
Foundation Knowledge	23	6	29
Specialized Knowledge	40	26	66
Total	**100**	**36**	**136**

Curriculum

The curriculum of EE program was issued under the Decision No. 3641/QĐ-ĐHNL-ĐT, dated 15th October, 2018 by the NLU President.

Degree: Bachelor of Engineering Program code: 7520320

Faculty: Environment and Natural Resources

The minimum number of credits accumulated: 136

Major: Environmental Engineering

Minimum GPA: 2.0

Total of compulsory credits 100

Total of elective credits 36

10 credits of graduation (III.3) are structured into three options:

Item	Course code	Course name (Vietnamese)	Course name (English)	C	T	Th	L	P	Pj	Tt	Y	S	Req (Code)	Pre (Code)	Par (Code)
	I. General knowledge:														
	I.1 Compulsory courses:														
1	200101	Triết học Marx Lenin	Philosophy of Marxism-Leninism	3	45	45	0	0	0	0	1	1			
2	200102	Kinh tế chính trị Marx Lenin	Political Economy of Marxism-Leninism	2	30	30	0	0	0	0	1	1			
3	202301	Hóa đại cương	General Chemistry	3	45	45	0	0	0	0	1	1			
4	202304	Thí nghiệm hoá đại cương	General Chemistry Laboratory	1	30	0	30	0	0	0	1	1			202301
5	202501	Giáo dục thể chất 1 *	Physical Education 1	1	45	0	0	45	0	0	1	1			
6	202622	Pháp luật đại cương	General Laws	2	30	30	0	0	0	0	1	1			
7	212302	Hình học hoạ hình	Descriptive geometry	2	30	30	0	0	0	0	1	1			
8	213603	Anh văn 1 **	English 1	4	60	60	0	0	0	0	1	1			
9	214103	Tin học đại cương	General Informatics	3	30	0	30	0	0	0	1	1			
10	200105	Lịch sử Đảng CSVN	History of the Communist Party	2	45	45	0	0	0	0	1	2			
11	200201	Quân sự 1 (lý thuyết) *	Military training 1 (Theory)	3	45	45	0	0	0	0	1	2			

12	200202	Quân sự 2 (thực hành) *	Military training 2 (Practice)	3	90	0	90	0	0	0	1	2			
13	202502	Giáo dục thể chất 2 *	Physical Education 2	1	45	0	0	45	0	0	1	2	202501		
14	213604	Anh văn 2 **	English 2	3	45	45	0	0	0	0	1	2	213603		
15	200103	Chủ nghĩa xã hội khoa học	Scientific socialism	2	30	30	0	0	0	0	2	1			
16	200107	Tư tưởng Hồ Chí Minh	Ho Chi Minh's Ideology	2	30	30	0	0	0	0	2	1			
Total credits:				**37**	690	450	150	90	0	0					
	I.2 Selective courses 0101 (**4** credits to be accumulated)														
1	202112	Toán cao cấp B1	Advanced Mathematics B1	2	30	30	0	0	0	0	1	1			
2	202113	Toán cao cấp B2	Advanced Mathematics B2	2	30	30	0	0	0	0	1	2	202112		
3	202401	Sinh học đại cương	General Biology	2	30	30	0	0	0	0	1	2			
4	202402	Thực hành Sinh học đại cương	General Biology Laboratory	1	30	0	30	0	0	0	1	2			202401
5	202121	Xác suất thống kê	Probability and Statistics	3	45	45	0	0	0	0	2	1	202113		
6	202413	Sinh học động vật	Animal Biology	2	30	30	0	0	0	0	2	1			
7	202414	Sinh học thực vật	Plant Biology	2	30	30	0	0	0	0	2	1			
8	212104	Sinh thái học môi trường	Environmental Ecology	2	30	30	0	0	0	0	2	1			
9	212206	Kỹ năng đàm phán	Negotiation skill	2	30	30	0	0	0	0	2	1			

Total credits:				**18**	**285**	**255**	**30**	**0**	**0**	**0**					
	II. Professional knowledge:														
	II.1 Compulsory courses:														
1	212331	Vẽ kỹ thuật	Technical Drawing	3	60	30	30	0	0	0	1	2			
2	212103	Vi sinh vật môi trường	Environmental Microbiology	2	45	15	30	0	0	0	2	1			
3	212305	Quá trình thuỷ lực trong Kỹ thuật Môi trường	Hydraulics for EE	2	30	30	0	0	0	0	2	1			
4	212306	Bơm và trạm bơm	Pump and Pump Station	3	45	45	0	0	0	0	2	1			
5	212207	Hoá lý	Physical Chemistry	2	30	30	0	0	0	0	2	2			
6	212303	Quá trình sinh học môi trường	Environmental Biotechnology Processes	2	45	15	30	0	0	0	2	2			
7	212317	Hoá Kỹ thuật Môi trường	EE Chemistry	2	45	15	30	0	0	0	2	2			
8	212319	Quá trình thiết bị trong CNMT	Process and Equipment in EE	2	30	30	0	0	0	0	2	2			
9	212522	Quan trắc môi trường	Environmental Monitoring	2	60	0	60	0	0	0	2	2			
10	212326	Kỹ thuật công trình	Construction engineering	3	45	45	0	0	0	0	3	1			
Total credits:				**23**	**435**	**255**	**180**	**0**	**0**	**0**					
	II.2 Selective courses 0201 (6 credits to be accumulated)														
1	212110	Khoa học môi trường	Fundamentals to Environmental Science	2	30	30	0	0	0	0	2	1			

2	212323	Thống kê ứng dụng trong KTMT	Environmental Applied Statistics	2	30	30	0	0	0	0	2	2			
3	212328	PPNC khoa học môi trường	Research Methodology in Environment	2	30	30	0	0	0	0	2	2			
4	212547	Năng lượng tái tạo	Renewable Energy	2	30	30	0	0	0	0	2	2			
5	212930	Phân tích Môi trường	Environmental Analysis	3	60	30	30	0	0	0	2	2			
6	212545	Phân tích định lượng	Quantitative Analysis	2	30	30	0	0	0	0	3	1			
7	212321	Anh văn chuyên ngành KTMT	English for EE	2	30	30	0	0	0	0	3	2			
8	212329	Kỹ thuật điện ứng dụng trong công nghệ Môi trường	Applied Electrical Engineering for ET	2	30	30	0	0	0	0	3	2			
9	212402	Độc chất học môi trường	Environmental Toxicology	2	45	15	30	0	0	0	3	2			
Total credits:				**19**	315	255	60	0	0	0					
	III. Specialized knowledge:														
	III.1 Compulsory courses:														
1	212333	Quản lý và xử lý chất thải rắn đô thị	Management and treatment of urban solid waste	3	60	30	0	0	30	0	2	2			
2	212304	Mạng lưới cấp và thoát nước	Water Supply and Drainage Network	3	60	30	0	0	30	0	3	1			
3	212307	Công nghệ xử lý nước cấp	Supply Water Treatment	3	45	45	0	0	0	0	3	1			

4	212308	Cấp thoát nước trong nhà	Water Supply and Drainage network inside building	3	45	45	0	0	0	0	3	1			
5	212330	Đồ án mạng lưới cấp và thoát nước	Project on Water Supply and Drainage Network	1	30	0	0	0	30	0	3	1	212331		212304
6	212337	Đồ án Cấp thoát nước trong nhà	Project on Water Supply and Drainage network inside building	1	30	0	0	0	30	0	3	1	212331		212308
7	212341	Đồ án công nghệ xử lý nước cấp	Project on Supply Water Treatment	1	30	0	0	0	30	0	3	1	212331		212307
8	212310	Đồ án xử lý khí thải	Project on Air Emission Treatment	1	30	0	0	0	30	0	3	2	212331		212311
9	212311	Công nghệ xử lý khí thải	Air Pollution Control Engineering	3	45	45	0	0	0	0	3	2			
10	212313	Xử lý nước thải đô thị	Urban Wastewater Treatment	3	45	45	0	0	0	0	3	2			
11	212314	Đồ án xử lý nước thải ĐT	Project on Urban Wastewater Treatment	1	30	0	0	0	30	0	3	2	212331		212313
12	212334	Kỹ thuật xử lý chất thải rắn công nghiệp và nguy hại	Treatment technology of hazardous industrial solid waste	2	30	30	0	0	0	0	3	2			

13	212910	Thực tập giáo trình 1-MT	Field trip 1-Env	1	30	0	0	30	0	0	3	2			
14	212324	Đồ án xử lý nước thải CN	Project on Industrial Wastewater Treatment	1	30	0	0	0	30	0	4	1	212331		
15	212325	Xử lý nước thải CN	Industrial Wastewater treatment	3	45	45	0	0	0	0	4	1			
16	212342	Thực tập công nhân	Worker internship	1	30	0	0	30	0	0	4	1			
17	212343	Sản xuất sạch hơn KTMT	Cleaner Production in EE	3	45	45	0	0	0	0	4	1			
18	212344	Đồ án Sản xuất sạch hơn KTMT	Project on Cleaner Production in EE	1	30	0	0	0	30	0	4	1			
19	212346	Thực hành công nghệ xử lý MT	ET Experiment	2	60	0	60	0	0	0	4	1			
20	212911	Thực tập giáo trình 2-MT	Field trip 2-Env	1	30	0	0	30	0	0	4	1	212910		
21	212914	Thực tập nghề nghiệp	Graduation Internship	2	30	0	0	30	0	0	4	2			
Total credits:				**40**	810	360	60	120	270	0					
	III.2 Selective courses 0301 – 16 credits to be accumulated														
1	212504	Luật và chính sách môi trường	Environmental Laws and Policy	2	30	30	0	0	0	0	2	1			
2	212327	Mô hình hoá môi trường	Environmental Modeling	2	30	30	0	0	0	0	3	1			
3	212340	Suy thoái và bảo vệ đất	Soil Degradation	2	45	15	30	0	0	0	3	1			

			and Protection												
4	212509	Kinh tế môi trường	Environmental Economics	2	30	30	0	0	0	0	3	1			
5	218101	Hệ thống thông tin địa lý ĐC	Introduction to Geographic Information System	3	60	30	30	0	0	0	3	1			
6	212109	Quản lý tài nguyên thiên nhiên	Natural Resources Management	2	30	30	0	0	0	0	3	2			
7	212507	Đánh giá tác động môi trường	Environmental Impact Assessment	2	30	30	0	0	0	0	3	2			
8	212551	Quản lý chất lượng môi trường	Environmental quality management	3	45	45	0	0	0	0	3	2			
9	212526	ISO 14000	ISO 14000	2	30	30	0	0	0	0	3	2			
10	212531	Kiểm toán môi trường	Environmental Auditing	2	30	30	0	0	0	0	3	2			
11	212318	Quy hoạch môi trường	Environmental Planning	2	30	30	0	0	0	0	4	1			
12	212345	An toàn sức khỏe môi trường	Health, Safety and Environment	3	45	45	0	0	0	0	4	1			
13	212535	Quản lý dự án Môi trường	Environmental Project Management	2	30	30	0	0	0	0	4	1			
14	212908	Quản lý MT & PT bền vững	Environmental Management and Sustainable Development	3	45	45	0	0	0	0	4	1			

15	212909	KTMT	EE	3	45	45	0	0	0	0	4	1			
16	212913	Kỹ năng tìm việc làm	Job Finding skills	1	30	0	30	0	0	0	4	1			
Total credits:				**36**	585	495	90	0	0	0					
	III.3 Courses for graduation - 10 credits to be accumulated														
1	212901	Khóa luận tốt nghiệp	Thesis on EE	10	150	0	0	0	150	0	4	2			
2	212917	Tiểu luân tốt nghiệp (5 TC) + phải đạt **thêm** 5TC ở nhóm tự chọn chuyên ngành (III.2)	Project on Environmental Engineering (5 credits) + 5 credits in selective group III.2	5	75	0	0	0	0	75	4	2			
Total credits:				**15**	**225**	**0**	**0**	**0**	**150**	**75**					

Note:

C: number of credits; T: Total of periods; Th: number of periods for Theory; L: number of periods for laboratory experiment; P: number of periods for Practice; Pj: number of periods for Project, Tt: number of periods for Thesis; Y: Year taken; S: Semester taken

Total credit from compulsory courses: 100; Total credit from elective courses: 36

Course flow chart is at [Core Exh. c2].

Part IV. Course syllabuses

Course syllabuses (outlines) are in [Exh. 2.2.2.b]. Samples of course outlines are available in English at [Core Exh. d].

Appendix 2: Checklist for AUN-QA Assessment at Program Level

Criteria	1	2	3	4	5	6	7
1. Expected Learning Outcomes							
1.1. The expected learning outcomes have been clearly formulated and aligned with the vision and mission of the university.				X			
1.2. The expected learning outcomes cover both subject specific and generic (i.e., transferable) learning outcomes.				X			
1.3. The expected learning outcomes clearly reflect the requirements of the stakeholders.				X			
Overall opinion				X			
2. Program Specification							
2.1. The information in the program specification is comprehensive and up to date.				X			
2.2. The information in the course specification is comprehensive and up to date.				X			
2.3. The program and course specifications are communicated and made available to the stakeholders.					X		
Overall opinion				X			
3. Program Structure and Content							
3.1. The curriculum is designed based on constructive alignment with the expected learning outcomes.				X			
3.2. The contribution made by each course to achieve the expected learning outcomes is clear.				X			
3.3. The curriculum is logically structured, sequenced, integrated and up to date.					X		
Overall opinion				X			
4. Teaching and Learning Approach							
4.1. The educational philosophy is well articulated and communicated to all stakeholders.			X				
4.2. Teaching and learning activities are constructively aligned to the achievement of the expected learning outcomes					X		
4.3. Teaching and learning activities enhance life-long learning			X				
Overall opinion				X			
5. Student Assessment							
5.1. The student assessment is constructively aligned to the achievement of the expected learning outcomes.					X		

5.2. The student assessments including timelines, methods, regulations, weight distribution, rubrics and grading are explicit and communicated to students.				X			
5.3. Methods including assessment rubrics and marking schemes are used to ensure validity, reliability and fairness of student assessment.			X				
5.4. Feedback of student assessment is timely and helps to improve learning.					X		
5.5. Students have ready access to appeal procedure.				X			
Overall opinion				X			
6. Academic Staff Quality							
6.1. Academic staff planning (considering succession, promotion, re-deployment, termination, and retirement) is carried out to fulfil the needs for education, research and service.					X		
6.2. Staff-to-student ratio and workload are measured and monitored to improve the quality of education, research and service.				X			
6.3. Recruitment and selection criteria including ethics and academic freedom for appointment, deployment and promotion are determined and communicated.			X				
6.4. Competences of academic staff are identified and evaluated				X			
6.5. Training and developmental needs of academic staff are identified, and activities are implemented to fulfil them					X		
6.6. Performance management including rewards and recognition is implemented to motivate and support education, research and service.					X		
6.7. The types and quantity of research activities by academic staff are established, monitored and benchmarked for improvement.					X		
Overall opinion					X		
7. Support Staff Quality							
7.1. Support staff planning (at the library, laboratory, IT facility and student services) is carried out to fulfil the needs for education, research and service.				X			
7.2. Recruitment and selection criteria for appointment, deployment and promotion are determined and communicated				X			
7.3. Competences of support staff are identified and evaluated			X				
7.4. Training and developmental needs of support staff are identified, and activities are implemented to fulfil them.				X			

7.5. Performance management including rewards and recognition is implemented to motivate and support education, research, and service.				X			
Overall opinion				X			
8. Student Quality and Support							
8.1. The student intake policy and admission criteria are defined, communicated, published, and up to date.					X		
8.2. The methods and criteria for the selection of students are determined and evaluated.					X		
8.3. There is an adequate monitoring system for student progress, academic performance, and workload.					X		
8.4. Academic advice, co-curricular activities, student competition, and other student support services are available to improve learning and employability.					X		
8.5. The physical, social, and psychological environment is conducive for education and research as well as personal well-being.					X		
Overall opinion					X		
9. Facilities and Infrastructure							
9.1. The teaching and learning facilities and equipment (lecture halls, classrooms, project rooms, etc.) are adequate and updated to support education and research.				X			
9.2. The library and its resources are adequate and updated to support education and research.				X			
9.3. The laboratories and equipment are adequate and updated to support education and research.				X			
9.4. The IT facilities including e-learning infrastructure are adequate and updated to support education and research.				X			
9.5. The standards for environment, health, and safety; and access for people with special needs are defined and implemented.				X			
Overall opinion				X			
10. Quality Enhancement							
10.1. Stakeholders' needs and feedback serve as input to curriculum design and development.					X		
10.2. The curriculum design and development process are established and subjected to evaluation and enhancement			X				
10.3. The teaching and learning processes and student assessment are continuously reviewed and evaluated to ensure their relevance and alignment.				X			

10.4. Research output is used to enhance teaching and learning					X		
10.5. Quality of support services and facilities (at the library, laboratory, IT facility and student services) is subjected to evaluation and enhancement.				X			
10.6. The stakeholder's feedback mechanisms are systematic and subjected to evaluation and enhancement.				X			
Overall opinion				X			
11. Output							
11.1. The pass rates and dropout rates are established, monitored, and benchmarked for improvement.				X			
11.2. The average time to graduate is established, monitored, and benchmarked for improvement.					X		
11.3. Employability of graduates is established, monitored, and benchmarked for improvement.				X			
11.4. The types and quantity of research activities by students are established, monitored, and benchmarked for improvement.					X		
11.5. The satisfaction levels of stakeholders are established, monitored, and benchmarked for improvement.				X			
Overall opinion				X			
OVERALL VERDICT				X			

Appendix 3: CLOs and PLOs matrix

SE	Course code	Course name	PLO															
			01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
1	200101	Philosophy of Marxism and Leninism	N	N	N	N	N	N	N	N	N	N	N	N	H	N	H	H
	200102	Political Economics of Marxism and Leninism	N	N	N	N	N	N	N	N	N	N	N	N	H	H	H	H
	202301	General Chemistry	H	S	H	H	H	H	H	N	N	S	S	S	S	S	S	N
	202304	General Chemistry Laboratory	H	H	S	S	H	S	S	H	H	S	N	S	N	H	H	H
	202501	Physical Education *	H	N	N	N	N	N	S	N	N	N	N	N	S	N	H	S
	202622	General Laws	H	N	N	N	S	N	S	N	N	N	N	H	S	N	S	S
	212302	Descriptive Geometry	H	N	N	N	N	N	H	H	S	H	H	N	S	N	N	H
	213603	English 1 **	N	N	N	N	N	N	H	H	N	N	N	N	S	S	S	S
	214103	General Informatics	H	H	N	N	N	N	N	S	H	H	S	N	H	N	N	N
	202112	Advanced Mathematics B1	H	H	S	N	S	S	S	N	N	S	N	S	S	N	S	S
2	200105	History of the Vietnamese Communist Party	N	N	N	N	N	N	N	N	N	N	N	N	H	H	H	H
	200201	Military training 1 (theory) *	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	200202	Military training 2 (practice) *	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	202502	Physical Education 2 *	H	N	N	N	N	N	S	N	N	N	N	N	S	N	H	S
	213604	English 2 **	N	N	N	N	N	N	H	H	N	N	N	N	S	S	S	S
	202113	Advanced Mathematics B2	H	H	N	N	S	S	S	S	N	S	N	S	S	N	S	S
	202401	General Biology	H	N	N	N	N	N	S	S	N	N	N	N	S	S	S	S
	202402	General Biology Laboratory	H	S	N	N	N	N	S	N	N	N	N	N	S	S	S	S
	212331	Technical drawing	H	N	N	N	N	N	H	H	S	H	H	N	S	N	N	H
3	200103	Scientific Socialism	N	N	N	N	N	N	N	N	S	N	N	S	H	H	H	H
	200107	Ho Chi Minh’s Ideology	N	N	N	N	N	N	N	N	S	N	N	S	H	H	H	H
	202121	Probability and Statistics	H	H	N	N	S	S	S	H	N	N	N	N	S	N	S	S
	202413	Animal Biology	H	N	N	N	N	N	S	S	N	N	N	N	S	S	H	H
	202414	Plant Biology	H	N	N	N	N	S	S	S	N	N	N	N	S	S	S	S
	212104	Environmental Ecology	S	H	H	S	S	H	S	S	H	S	N	S	H	H	H	H
	212301	Negotiation skill	S	S	N	S	H	S	H	S	N	N	N	S	H	H	H	H

	212103	Environmental Microbiology	H	H	H	H	S	H	S	S	H	H	H	N	S	S	S	S
	212305	Environmental Hydraulic Processes for ET	H	H	S	H	H	S	H	S	H	H	H	S	H	H	S	H
	212306	Pumps and Pumping stations	H	S	H	S	S	H	S	S	H	N	H	N	S	S	S	S
	212110	Fundamentals to Environmental Science	H	S	H	S	S	H	S	H	H	H	H	S	H	H	S	H
	212504	Environmental Laws and Policy	S	H	H	H	H	S	H	S	S	H	H	N	S	H	N	S
	200103	Scientific Socialism	N	N	N	N	N	N	N	N	S	N	N	S	H	H	H	H
4	212207	Physical Chemistry	H	H	H	H	H	H	S	S	H	H	S	N	S	S	N	H
	212303	Environmental Biotechnology Processes	H	H	H	H	S	H	H	S	H	H	S	S	H	H	H	H
	212317	EE Chemistry	H	H	H	N	H	H	S	S	H	H	N	N	S	H	S	H
	212319	Process and Equipment in EE	H	S	H	H	N	H	S	N	S	H	S	N	N	S	S	S
	212522	Environmental Monitoring	S	H	H	H	H	S	S	S	S	S	S	H	H	H	S	S
	212323	Environmental Applied Statistics	H	H	S	S	S	S	N	S	S	H	N	N	S	S	S	N
	212328	Research Methodology in Environment	H	H	H	S	S	H	H	S	H	S	S	S	H	H	H	H
	212547	Renewable Energy	S	S	H	H	S	S	S	S	H	N	S	H	S	S	S	S
	212930	Environmental Analysis	H	H	H	S	S	H	S	S	S	H	S	S	H	H	H	H
	212333	Urban Solid Waste Management and Treatment	H	H	H	H	H	S	H	S	H	N	S	H	H	H	S	H
5	212326	Construction Engineering	N	N	N	S	S	S	N	N	H	H	S	H	H	H	S	H
	212545	Quantitative Analysis	S	H	S	S	N	S	S	S	H	N	N	N	N	H	N	N
	212304	Water Supply and Drainage Network	S	S	S	S	S	H	N	S	S	N	S	S	S	S	S	S
	212307	Supply Water Treatment	N	S	S	H	S	S	S	S	H	N	S	H	S	S	S	S
	212308	Water Supply and Drainage network inside building	S	S	S	S	H	S	H	S	S	S	S	H	H	S	H	H
	212330	Project on Water Supply and Drainage Network	S	H	S	S	S	S	H	S	S	N	S	S	S	S	S	S

	212337	Project on Water Supply and Drainage network inside building	S	H	N	N	H	S	H	S	S	H	N	S	S	S	H	H
	212341	Project on Supply Water Treatment	S	H	S	H	S	S	S	S	H	H	S	H	S	S	H	S
	212327	Environmental Modeling	N	N	N	H	H	H	S	S	H	S	S	H	H	N	S	N
	212340	Soil Degradation and Protection	H	H	S	S	S	S	S	S	H	H	N	S	H	H	H	H
	212509	Environmental Economics	H	S	S	N	S	H	S	H	S	N	N	H	S	H	N	N
6	212321	English for ET	S	S	S	S	N	H	H	H	S	N	N	N	S	H	H	S
	212329	Applied Electrical Engineering for ET	H	S	S	H	N	H	S	N	S	H	H	N	S	S	S	S
	212402	Environmental toxicology	S	H	H	H	S	H	S	H	H	S	S	S	H	H	S	H
	212310	Project on Air Emission Treatment	H	H	S	H	H	S	N	N	H	H	H	H	N	N	N	S
	212311	Air Pollution Control Engineering	H	H	H	H	S	S	N	N	H	H	H	H	N	S	N	S
	212313	Urban Wastewater Treatment	H	H	H	H	H	S	S	S	H	H	H	H	H	H	N	N
	212314	Project on Urban Wastewater Treatment	H	H	H	H	H	S	S	S	H	H	H	H	H	H	S	S
	212334	Industrial and Hazardous solid waste treatment	H	H	H	H	H	H	H	S	H	N	H	H	H	H	H	H
	212910	Field trip 1	H	H	H	H	S	S	S	N	S	H	H	S	S	S	S	S
	212109	Natural Resources Management	S	H	S	S	H	H	S	S	S	N	N	H	H	H	S	S
	212507	Environmental Impact Assessment	H	H	H	H	H	S	S	S	S	S	H	H	S	H	N	S
	212321	English for ET	S	S	S	S	N	H	H	H	S	N	N	N	S	H	H	S
	212329	Applied Electrical Engineering for ET	H	S	S	H	N	H	S	N	S	H	H	N	S	S	S	S
	212402	Environmental toxicology	S	H	H	H	S	H	S	H	H	S	S	S	H	H	S	H
	212511	Environmental quality management	S	H	N	H	H	S	S	S	H	N	S	H	S	H	S	N

	212526	ISO 14000	S	H	S	H	H	S	H	S	S	N	S	H	S	S	S	S
	212531	Environmental Auditing	S	H	N	S	H	S	S	H	S	N	S	H	S	S	S	S
7	212324	Project on Industrial Wastewater Treatment	H	H	H	H	H	S	S	S	H	H	H	H	H	H	S	S
	212325	Industrial Wastewater Treatment	H	H	H	H	H	S	S	S	H	H	H	H	H	H	N	N
	212342	Worker Internship	H	H	H	H	S	H	S	S	S	H	H	S	S	S	S	S
	212343	Cleaner Production in EE	H	S	S	H	H	S	N	S	H	S	S	H	S	S	S	S
	212344	Project on Cleaner Production in EE	S	H	S	H	H	S	S	S	H	S	S	H	S	S	S	S
	212346	ET Experiment	H	H	H	H	N	H	S	N	H	H	H	S	S	S	S	S
	212911	Field trip 2	H	H	H	H	S	H	S	N	S	H	H	S	S	S	S	S
	212318	Environmental Planning	S	S	N	N	H	S	H	S	N	N	N	S	H	H	S	S
	212345	Health, Safety and Environment	H	S	S	S	H	S	S	N	S	N	N	H	H	H	S	S
	212535	Environmental Project Management	S	H	H	H	H	S	S	N	N	N	N	H	H	H	H	H
	212908	Environmental Management and Sustainable Development	S	H	S	S	H	S	H	S	S	N	N	H	N	H	H	H
	212909	Environmental Engineering	S	H	H	H	H	S	S	S	S	S	S	H	H	H	S	S
	212913	Job Finding skills	N	N	N	N	N	N	H	H	N	N	N	N	H	H	H	H
8	212901	Thesis on EE	H	H	H	H	H	H	H	H	H	H	H	H	H	S	H	H
	212917	Graduation Internship	H	H	H	H	S	H	S	N	N	H	H	N	S	S	S	S
	212902	Minor thesis on EE (5 credits) + **Another** 5 credits must be acquired from group of selective courses for major (III.2)	H	H	H	H	H	H	H	H	H	H	H	H	H	S	H	H

Note: *The contents of the courses are fixed for all undergraduate educational programs of NLU

SE = Semester; H = Highly Supporting; S = Supporting; and N = None Supporting

Appendix 4: Supporting documents and evidence

No	Exh.		Title of Exhibition	Category
PART 1: INTRODUCTION				
1	Exh. 1.1	a	Plan of Self-Assessment of Curriculum in accordance with AUN-QA standards in 2021 - 2022	Document
		b	Decision on the Approval of EE program in 2001	Document
2	Exh. 1.2	a	Decision on Self-Assessment Council Board of EE program	Document
		b	Guide to AUN-QA assessment at program level, version 3.0	Document
3	Exh. 1.3	a	NLU history and transformation	Document
		b	NLU vision	Website
		c	NLU mission and objectives	Website
4	Exh. 1.4	a	Decision on the Foundation of FENR in 2009	Document
PART 2. ASSESSMENT OF AUN-QA CRITERIA AT PROGRAM LEVEL **Criterion 1: EXPECTED LEARNING OUTCOMES**				
1	Exh. 2.1.1	a	The vision, mission, and strategy of NLU-Vietnam	Document
2	Exh. 2.1.3	a	Circular No. 07/2015/TT-BGDĐT	Document
		b	Benchmarking of the EE program in 2018 with others	Document
		c	MoM of program improvement	Document
		d	Publishing of the education program on the Website	Website
Criterion 2: PROGRAM SPECIFICATION				
1	Exh. 2.2.1	a	Decision No.5657 QĐ-BGD&ĐT	Document
		b	Report on the differences between EE curriculum in 2014, 2018 and 2020	Document
		c	The Program version 2014	Document
		d	The Program version 2018	Document
		e	The Program version 2020	Document
2	Exh. 2.2.2	a	Sample of course specification version 2020	Document
		b	Course specification version 2020	Document
		c	Procedure of developing course syllabus	Document
3	Exh. 2.2.3	a	Poster	Photo
		b	Student's Handbooks from 2015 to 2019	Document
Criterion 3: PROGRAM STRUCTURE AND CONTENTS				

1	Exh. 2.3.1	a	Report on the differences between EE curriculum in 2014, 2018 and 2020	Document
		b	Rubrics for student assessment	Document
	Exh. 2.3.3	a	Benchmarking of the EE program in 2018 with others	Document
3		b	List of equivalent subjects	Document
4		c	List of students who study a second diploma	Document
Criterion 4: TEACHING AND LEARNING APPROACH				
1	Exh. 2.4.1	a	The vision, mission, and strategy of NLU-Vietnamese	Document
		b	The vision, mission, and strategy of NLU-English	Document
		c	Sample of student handbook	Document
2	Exh. 2.4.2	a	The schedule of civic activities for first year student	Document
		b	The student's seminar report	Document
		c	Student learning activity in class	Photo
		d	Photos of field trips	Photo
		e	List of scientific research topic of environmental student	Document
		f	Guideline of the implementation of student scientific research	Document
		g	Student research award	Document
		h	The online training regulations of NLU	Document
		i	The notification of online training	Document
		j	The photos of online training	Photo
		k	The photos of email sending documents	Photo
		l	The documents of lecturer website	Photo
		m	The commitment of supporting internet signal	Folder
		n	The notification of online training until the pandemic under control	Document
3	Exh. 2.4.3	a	The student design of wastewater treatment plan	Document
		b	Student activities	Photo
Criterion 5: STUDENT ASSESSMENT				
1	Exh. 2.5.1	a	Academic regulations	Document
		b	Official forms for internship application	Website
		c	Internship recommendation letter	Document
		d	Register for graduation thesis	Document
		e	Research proposal	Document
		f	Periodical report	Document

		g	Thesis defend documents	Document
		h	Output standard	Document
		i	Online training regulations	Document
2	Exh. 2.5.2	a	Sample of student account	Photo
3	Exh. 2.5.3	a	Exam schedule on Student account	Photo
4	Exh. 2.5.4	a	Supervisor comment on thesis	Photo
		b	Machinery and equipment	Document
5	Exh. 2.5.5	a	Complaining procedure_Page 34 & 53	Document
		b	Student handbook_page 57-61	Document
		c	Academic advisors work with students	Document
Criterion 6: ACADEMIC STAFF QUALITY				
1	Ehx. 2.6.1	a	Circular of MOET on academic staff regulation	Document
		b	NLU regulation of academic staff workload	Document
		c	List of Academic staffs supporting EE program	Document
		d	Faculty staff list	Document
2	Exh. 2.6.2	a	Circular 32_Enrollment quota regulation	Document
		b	MOET regulation of workload of academic staff	Document
3	Exh. 2.6.3	a	Regulation of Recruitment	Document
		b	Regulation of Academic Tittle Award	Document
4	Exh. 2.6.4	a	Regulation of Research load	Document
		b	Regulation of research load of high educational academic staff	Document
5	Exh. 2.6.5	a	Announcement of promotion exam	Document
		b	Regulation on abroad and domestic education	Document
		c	Regulations on training and fostering public employees	Document
6	Exh. 2.6.6	a	Regulation on public employee assessment	Document
		b	Instructions for implementing reward emulation	Document
		c	Award on international publication by NLU	Document
		d	Award on international publication by MOET	Document
7	Exh. 2.6.7	a	Dispatch of declaring the number of articles	Document
Criterion 7: SUPPORT STAFF QUALITY				
1	Exh. 2.7.1		Recruitment standards	Document
2	Exh. 2.7.2		Procedure of staff recruitment	Folder

3	Exh. 2.7.4		Procedure of staff enhancement	Document
4	Exh. 2.7.5	a	Procedure of staff's performance assessment	Document
		b	Procedure of staff's performance assessment flow chart	Document
Criterion 8: STUDENT QUALITY AND SUPPORT				
1	Exh. 2.8.1	a	Scheme on enrollment	Document
		b	NLU's Website of admissions	Website
		c	Tien Phong newspaper	Website
		d	Regulation on enrollment	Document
		e	New students' survey	Document
2	Exh. 2.8.2	a	Scheme on enrollment	Document
		b	Dispatch No. 2832/BGDDT-GDDH	Document
		c	Notification No. 742/DHNL-DT	Document
		d	Plan to welcome new students	Document
3	Exh. 2.8.3	a	Academic warning process	Document
		b	Websites showing the English and IT assessment results: https://aic.hcmuaf.edu.vn/ http://cfs.hcmuaf.edu.vn/	Website
		c	Student's Handbook	Document
		d	Annual Youth Union reports	Document
		e	Practice course report and confirmation	Document
4	Exh. 2.8.4	a	Decision No. 490/QD-DHNL-TCCB	Document
		b	Fan page of FERN's Youth Union: https://www.facebook.com/DOANHOI.MTTN.NLU/	Facebook
		c	NLU financial supports for FERN's Youth Union and clubs	Document
		d	Academic competitions photos	Photo
		e	Multimedia room photos	Photo
		f	Internet service agreement	Document
		g	Dormitory's report	Document
		h	Map from NLU to the hospitals	Photo
		i	Decision on tuition waiver	Document
		k	Scholarships for NLU's students	Document
5	Exh. 2.8.5	a	Sports stadium construction design	Document
		b	Total area for sport activities	Document

		c	Photos of students' activities	Photo
		d	Establishment decision of Psychological Counseling Team	Document
Criterion 9: FACILITIES AND INFRASTRUCTURE				
1	Exh. 2.9.1	a	NLU's report on classrooms, libraries of faculties, and central library	Document
		b	Statistical table of facilities of FENR	Document
		c	Free Wifi service agreement of SPT and Nong Lam University	Pictures
		d	Master plan drawing of the old Applied Informatics Center area	Pictures
2	Exh. 2.9.2	a	List of study materials of Environment/Resources in central library	Document
		b	List of study materials required	Document
		c	Library management software adjustment contract	Document
		d	A project for central library renewed	Document
		e	Results of survey on satisfaction (2020)	Document
		f	FENR reading room	Pictures
3	Exh. 2.9.3	a	NLU self-assessment report	Document
		b	List of Lab equipment of Faculty	Document
		c	List of equipment for annual procurement	Document
		d	Purchase and repair procedures	Document
4	Exh. 2.9.4	a	Email list of NLU staffs	Document
		b	NLU regulation for e-learning teaching	Document
		c	List of courses registered to teach online	Document
		d	NLU regulation for on-line examination	Document
		e	Online exam notice	Photos
		f	List of online exam courses	Document
5	Exh. 2.9.5	a	Circular No. 30/2020/TT-BGDDT	Document
		b	Dormitory report	Document
		c	Sport stadium construction design	Pictures
		d	Decision on establishing the security team	Document
		e	List of NLU' s fire protection team	Document
		f	Notice of fire protection training	Document
		g	Some photos of the safety system	Photos
		h	Waste management process	Document

		i	Laboratory rules	Document
Criteria 10: QUALITY ENHANCEMENT				
1	Exh. 2.10.1	a	Program development and implementation 2014, 2018, 2020	Folder
		b	New students' feedback report	Document
		c	Alumni association activities	Folder
		d	Report on course changing and new course forming	Folder
2	Exh. 2.10.3	a	Teaching and Learning plan	Folder
		b	Teaching and Learning inspection	Folder
		c	Academic regulation of NLU	Document
		d	Sample of intern evaluation	Document
3	Exh. 2.10.4	a	Lectures and Research Projects	Folder
		b	Decision intends to establish Young environmental scientist Club	Folder
		c	Student's research topic	Folder
		d	Student Research Award	Folder
4	Exh. 2.10.5	a	Description of laboratory	Folder
		b	Regulation of online teaching at the University	Folder
		c	Activities of library	Folder
		d	Sample of NLU’s Journals	Document
5	Exh. 2.10.6	a	Minutes of cooperation agreement	Folder
		b	Minutes of the Conference of Staff and Employees	Folder
Criteria 11. OUTPUT				
1	Exh. 2.11.1	a	List of graduates	Document
		b	Student’s handbook	Document
2	Exh. 2.11.2	a	List of registered students	Document
		b	Career counseling mailboxes, Support Scholarship	Document
3	Exh. 2.11.3	a	Recruitment information on the Faculty's Fan page	Internet link; Photo
		b	Group Facebook of the Faculty	Internet link; Photo
		c	Faculty’s Facebook	Internet link; Photo
4	Exh. 2.11.4	a	List of scholarship students	Document
		b	Commercialized products	Document

		c	Related scientific articles	Document
		d	Model of domestic wastewater treatment	Document
		e	Award Certificates	Document