

MINISTRY OF EDUCATION AND TRAINING
QUY NHON UNIVERSITY



UNDERGRADUATE PROGRAM

Level	:	Undergraduate
Major	:	Chemical Engineering Technology
Specialization	:	<i>1. Organic – Petrochemical Technology</i> <i>2. Environment Technology</i>
Code	:	7510401
Mode of Study	:	Full-time

Gia Lai, 2025

UNDERGRADUATE PROGRAM

*(Issued together with Decision No. 2178/QĐ-ĐHQN dated August 01, 2025
of the Rector of Quy Nhon University)*

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1. OBJECTIVES

1.1. General objectives

Upon graduation, learners will become Chemical Engineering Technology engineers equipped with a solid foundation integrating theory and practice. They will be highly adaptable to practical production environments within their specialization, possessing strong ethical, political, and physical qualities. Furthermore, they will have a firm grasp of scientific research methods, demonstrate independent and creative thinking, and exhibit the capacity for independent learning and continuous professional development in the field of chemical engineering. They will also demonstrate the ability to work independently and collaboratively, maintain a strong sense of professional responsibility and community service, and successfully adapt, integrate, and advance to meet the rigorous demands of a highly skilled labor market.

1.2. Specific objectives (referred to as POs)

Upon graduation, learners will be able to:

- + PO1: Demonstrate foundational knowledge of natural and social sciences, political science, and law.
- + PO2: Apply specialized knowledge, professional skills, and practical competence in the field of Chemical Engineering Technology to meet the demands of an integrated environment.
- + PO3: Exhibit critical thinking, proactive collaboration, and problem-solving capabilities related to Chemical Engineering Technology; demonstrate an entrepreneurial and innovative mindset, digital literacy, and foreign language proficiency; and rapidly adapt to changes within a multidisciplinary working environment.
- + PO4: Demonstrate a commitment to independent learning, professional ethics, occupational responsibility, and a sense of community service.

2. EMPLOYMENT OPPORTUNITIES AND FURTHER STUDY PROSPECTS

Graduates of the Chemical Engineering Technology program can pursue the following career paths:

- Managing and operating process equipment systems; conducting product research and development (R&D); and performing Quality Assurance (QA) and Quality Control (QC) at factories and enterprises within the chemical, plastics, fertilizer, food, pharmaceutical, and oil and gas industries, etc.

- Working in laboratories at factories, production facilities, or environmental monitoring centers.

- Calculating, designing, supervising, constructing, and operating chemical process equipment and waste treatment facilities (solid, liquid, and gas).

- Founding and managing entrepreneurial ventures, as well as developing projects and businesses within the field of Chemical Engineering Technology.

- Working at research institutes (e.g., Institutes of Chemistry, Environment, Materials, Cosmetics, etc.) or state regulatory agencies (e.g., Departments of Agriculture, Environment, Science and Technology, Industry and Trade; Industrial Zone Management Boards; and local Divisions of Land Management, Agriculture, Construction, and Environment).

- Teaching and conducting research at universities, colleges, and research institutes. Additionally, graduates may pursue Master's and Doctoral degrees domestically and internationally.

3. LEARNING OUTCOMES

Program Learning Outcomes (PLOs) and Performance Indicators (PIs) used to assess the PLOs of the Chemical Engineering Technology Program

The program is designed to ensure that graduates of the Chemical Engineering Technology major achieve the following learning outcomes:

Program Learning Outcomes	Performance Indicators
PLO1: Demonstrate an understanding of the fundamental guidelines and policies of the Communist Party of Vietnam, as well as State laws; and explain knowledge of natural sciences to solve problems in professional activities and daily life.	PI 1.1: Demonstrate an understanding of foundational knowledge in social sciences, political science, law, and national defense and security within the context of professional activities and daily life.
	PI 1.2: Explain knowledge of natural sciences to solve problems in professional activities and daily life.
PLO2: Apply foundational knowledge of the discipline to build a basis for specialized knowledge in the field of Chemical Engineering Technology.	PI 2.1: Apply foundational knowledge of chemistry to explain the properties of matter, chemical transformations, and chemical applications related to Chemical Engineering Technology.
	PI 2.2: Apply foundational knowledge of electrical engineering, electronics, engineering mechanics, process equipments, sampling techniques, and measurement techniques to perform

	calculations, design, and select equipment and technologies within the field of Chemical Engineering Technology.
PLO3: Apply specialized knowledge to evaluate product quality; and to calculate, design, operate, and supervise technological and waste treatment processes.	PI 3.1: Apply specialized knowledge in chemistry, food, pharmaceuticals, chemicals, petroleum, and petrochemicals, etc., to support the Organic and Petrochemical Technology specialization.
	PI 3.2: Apply specialized environmental knowledge to support the Environmental Technology specialization.
PLO4: Apply digital competencies in learning and professional work, adapting to technological advancement trends and an integrated environment.	PI 4.1: Utilize artificial intelligence (AI) tools; efficiently collect, store, process, and analyze digital data; while ensuring information safety and security in a digital environment.
	PI 4.2: Apply digital tools to support design, work supervision, planning, and task management, meeting the demands of digital transformation in fields related to Chemical Engineering Technology.
PLO5: Apply laboratory, practical, internship, and industrial practicum skills, and analyze data and information to solve problems bridging theory and practice in the fields of science, technology, and environment.	PI 5.1: Apply laboratory and practical skills in combination with the operation and utilization of modern tools in specialized areas related to science, technology, and environment.
	PI 5.2: Apply acquired knowledge and skills in practical settings through industrial internships at factories and production facilities related to Organic and Petrochemical Technology, and Environmental Technology.
	PI 5.3: Analyze data and information to solve problems bridging theory and practice in the fields of science, technology, and environment.
PLO6: Apply supplementary knowledge and professional skills in occupational activities.	PI 6.1: Apply skills including communication, teamwork, and entrepreneurship to advance professional careers in an interdisciplinary and globalized context.

	PI 6.2: Apply supplementary knowledge of foreign languages and information technology to advance within the field of Chemical Engineering Technology.
PLO7: Demonstrate professional conduct and professional ethics of a Chemical Engineering Technology engineer; exhibit professional responsibility and a commitment to lifelong learning and research to enhance professional competence.	PI 7.1: Demonstrate professional conduct and professional ethics; exhibit discipline and adherence to the law; and demonstrate the roles and responsibilities of a Chemical Engineering Technology engineer within enterprises and society.
	PI 7.2: Demonstrate the ability to engage in independent learning and autonomous work; exhibit teamwork capabilities and a commitment to continuous professional development.

4. PROGRAM DURATION AND TOTAL ACADEMIC WORKLOAD

4.1. Program duration: 4.5 years

4.2. Total academic workload: 150 credits (excluding 3 credits of Physical Education and 9 credits of National Defense and Security Education)

No.	Program structure	Credits
1	General Knowledge	24
1.1	Political Science and Law	13
1.2	Foreign Language	7
1.3	Social Sciences	4
2	Professional Knowledge	126
2.1	Fundamental Knowledge	35
2.2	Specialized Knowledge	50
2.3	Supplementary Knowledge	33
2.4	Capstone project	8
Total		150

5. ADMISSION REQUIREMENTS

According to the current admission regulations of the Ministry of Education and Training and Quy Nhon University.

6. MODE OF STUDY AND GRADUATION REQUIREMENTS

6.1. Mode of study: Credit-based system

6.2. Graduation Requirements: (professional knowledge, prerequisite courses, foreign language, and information technology standards)

- Accumulate the required number of courses and credits of the training program;

- Achieve the program learning outcomes (PLOs) of the training program;
- Achieve a Cumulative Grade Point Average (CGPA) of 2.00 or higher for the entire program;
- Complete Physical Education courses and obtain a National Defense and Security Education certificate;
- Meet the foreign language and Information Technology proficiency standards as prescribed by the University.

7. TEACHING METHODS AND LEARNING ASSESSMENT

7.1 Teaching Methods

Depending on the teaching strategies of the courses, corresponding teaching methods will be applied.

 **Face-to-Face Teaching:** Most theoretical courses are taught using methods such as presentations, lecturing, Q&A sessions, guided questioning, and assigning homework to students, while assessing students' independent learning capacity through assignments and discussions. The corresponding teaching methods are as follows:

- + Lecturing
- + Guided questioning
- + Discussion

 **Indirect Teaching:** Some courses employ indirect instruction without explicit intervention from lecturers, such as course projects and graduation projects. The corresponding teaching methods are as follows:

- + Open-ended questioning
- + Idea generation
- + Case studies
- + Problem-solving

 **Experiential learning:** Various courses in the program are designed for experiential learning. These include practical and laboratory courses at the University's laboratory facilities; technical internships and industrial practicums at factories; graduation internships at companies, factories, and enterprises; as well as course projects and graduation projects. The corresponding teaching methods are as follows:

- + Modeling
- + Internships and practicums
- + Laboratory experiments
- + Design

 **Interactive Teaching and Learning:** Implemented in several courses of the program. Students engage in group assignments, group presentations, laboratory experiments, group practical sessions, graduation internships, industry site visits, and graduation projects. The corresponding teaching methods are as follows:

- + Discussion
- + Problem-solving
- + Group study
- + Interaction & Feedback

Independent learning: Experimental and design activities within course projects and graduation projects; presenting course projects and graduation projects; completing homework, major assignments, and take-home essays; writing laboratory reports; presenting experiments; and self-study. The corresponding teaching methods are as follows:

- + Individual assignments
- + Research topics and projects
- + Computer-assisted instruction

7.2 Learning Assessment

* **Grading scale:**

A 10-point scale is used for all assessment components within the courses.

* **Format, evaluation criteria, and scoring system:**

a. Theoretical courses

No	Format	Evaluation criteria	Weight
1	Progress Assessment	Initiative, level of active preparation, and participation in class activities.	40%
		Class attendance is governed by individual lecturers' regulations, and the lecturer determines the score based on the absence rate.	
		Depending on the specific characteristics of the course, the lecturer may require students to complete one or a combination of the following activities: - Take an individual test. The evaluation criteria for the test will be clearly specified by the lecturer. - Complete group reports, seminars, major assignments, or practical assignments (if the course includes both theory and practice), as prescribed by the instructor. The evaluation criteria for reports, seminars, major assignments, etc., will be clearly specified by the lecturer.	
2	Final exam	Final examination; Exam format: Written/Oral/etc.; Evaluation criteria: According to the answer key provided by the lecturer who set the exam.	60%

b. Laboratory – practical courses

Students must fully attend all laboratory and practical sessions. The arithmetic mean of the practical scores throughout the semester, rounded to one decimal place, constitutes the final grade for the practical course.

c. Course project: 50% continuous assessment; 50% project presentation.

d. Internships and field trips: 50% continuous assessment; 50% report presentation.

Graduation internship: 50% continuous assessment; 50% report presentation.

e. Graduation project: Conducted in accordance with the Undergraduate Academic

Regulations promulgated under Decision No. 1487/QĐ-ĐHQN dated July 1, 2021, by Quy Nhon University.

*** *Assessment Methods***

The assessment methods employed in the Chemical Engineering Technology program are classified into two main categories: Formative Assessment and Summative Assessment.

Detailed descriptions of these assessment methods are provided in the table below:

Assessment Methods	Program Learning Outcomes (PLOs)						
	1	2	3	4	5	6	7
<i>I. Formative Assessment</i>							
1. Attendance assessment	X	X		X		X	X
2. Assignment assessment	X	X	X	X	X	X	X
3. Presentation assessment	X	X	X		X	X	X
<i>II. Summative Assessment</i>							
4. Written examination	X	X			X	X	X
5. Multiple-choice examination	X	X	X			X	X
6. Defense and oral examination	X	X	X	X	X	X	X
7. Report	X	X	X	X	X	X	X
8. Presentation assessment	X	X	X	X	X	X	X
9. Group work assessment	X	X	X	X	X	X	X

8. PROGRAM CONTENT

No	Course Code	Course Name	Semester	Number of credits	Theory	Assignment	Discussion	Experiment/PRACTICE	Others	Self-study Hours	Prerequisite Course Code	Department in Charge	Note
I. General Knowledge				36	(Excl. 3 PE credits and 9 NDSE credits)								
I.1. Political Science and Law				13									
1	1130299	Marxist-Leninist Philosophy	1	3	40	0	10	0	0	85		DPSLM	
2	1130300	Marxist-Leninist Political Economy	2	2	27	0	6	0	0	57	1130299	DPSLM	
3	1130049	Introduction to Law	2	2	27	0	6	0	0	57		DPSLM	
4	1130301	Scientific Socialism	3	2	27	0	6	0	0	57	1130300	DPSLM	
5	1130302	History of the Communist Party of Vietnam	4	2	27	0	6	0	0	57	1130301	DPSLM	
6	1130091	Ho Chi Minh Thought	5	2	27	0	6	0	0	57	1130302	DPSLM	
I.2. Physical Education, National Defense and Security Education													
I.2.1. National Defense and Security Education				9									
7	1120168	National Defense and Security Education 1	4	3	37	0	8	0	0	82		CNDSE	
8	1120169	National Defense and Security Education 2	4	2	22	0	8	0	0	52		CNDSE	
9	1120170	National Defense and Security Education 3	4	2	14	0	0	16	0	44		CNDSE	
10	1120171	National Defense and Security Education 4	4	2	4	0	0	56	0	64		CNDSE	
I.2.2. Physical Education (Students choose 1 out of 8 following groups)				3									
11	1120172	Physical Education 1 (Football 1)	1	1	4	0	0	26	0	21		DPE	
12	1120173	Physical Education 2 (Football 2)	2	1	4	0	0	26	0	21	1120172	DPE	
13	1120174	Physical Education 3 (Football 3)	3	1	4	0	0	26	0	21	1120173	DPE	
14	1120175	Physical Education 1 (Volleyball 1)	1	1	4	0	0	26	0	21		DPE	
15	1120176	Physical Education 2 (Volleyball 2)	2	1	4	0	0	26	0	21	1120175	DPE	
16	1120177	Physical Education 3 (Volleyball 3)	3	1	4	0	0	26	0	21	1120176	DPE	
17	1120178	Physical Education 1 (Basketball 1)	1	1	4	0	0	26	0	21		DPE	
18	1120179	Physical Education 2 (Basketball 2)	2	1	4	0	0	26	0	21	1120178	DPE	
19	1120180	Physical Education 3 (Basketball 3)	3	1	4	0	0	26	0	21	1120179	DPE	
20	1120181	Physical Education 1 (Badminton 1)	1	1	4	0	0	26	0	21		DPE	

[illegible]

No	Course Code	Course Name	Semester	Number of credits	Theory	Assignment	Discussion	Experiment/Pra	Others	Self-study Hours	Prerequisite Course Code	Department in Charge	Note
39	2020007	General Physics	1	2	20	6	8	0	0	56		DNS	
40	1010349	Calculus	1	3	31	14	0	0	0	90		DMS	
41	1050241	Basic Information	1	3	30	0	0	30	0	90		DIT	
42	1030312	General Chemistry	2	3	24	15	12	0	0	84		DNS	
43	1010350	Statistics – Numerical Methods	2	3	30	15	0	0	0	90		DMS	
44	2020787	Applied inorganic chemistry	3	3	26	4	0	30	0	75	1030312	DNS	
45	2020788	Applied physical chemistry	3	3	35	8	4	0	0	88	1030312	DNS	
46	1160838	Electronics Engineering	3	2	18	6	0	12	0	54	2020007	DET	
47	1160596	Electrical Techniques	4	2	16	4	0	20	0	50	2020007	DET	
48	2020789	Applied Organic chemistry	4	3	30	0	0	30	0	73	1030312 1030314	DNS	
49	2020790	Applied Analytical Chemistry	4	3	23	5	4	30	0	73		DNS	
50	1160839	Mechanical Engineering	4	2	20	10	0	0	0	60		DET	
51	2020791	Modern analytical methods	5	3	30	0	0	30	0	73	2020790	DNS	
II.2. Specialized knowledge				50									
II.2.1. Industry knowledge				11									
52	2020792	Mechanical and Hydraulic Processes and Equipment	3	3	30	12	6	0	0	85		DNS	
53	2020793	Heat Transfer Processes and Equipment	4	2	22	6	4	0	BTL	56	2020792	DNS	
54	2020794	The Process and Equipment of Mass Transfer	5	3	36	6	6	0	BTL	86	2020792	DNS	
55	1030325	Automation control and measurement engineering in chemical	6	3	36	6	6	0	0	87		DNS	
II.2.2. Specialized Knowledge				39									
II.2.2.1. Organic - Petrochemical Technology Major				39									
II.2.2.1a. Compulsory Courses				31									
56	2020795	Fuel Chemistry	6	2	26	0	8	0	0	56	2020789	DNS	
57	2020796	Industrial Biochemistry	6	2	28	0	4	0	0	60	2020789	DNS	
58	1150423	Production management	6	2	23	5	4	0	0	58	1130002	DFBA	

No	Course Code	Course Name	Semester	Number of credits	Theory	Assignment	Discussion	Experiment/Pra	Others	Self-study Hours	Prerequisite Course Code	Department in Charge	Note
59	2020797	Reaction Engineering and Equipment	6	3	30	12	6	0	0	85	2020794	DNS	
60	2020429	Management Product Quality and Production	7	2	24	4	4	0	0	58	1150423	DNS	
61	2020798	Petroleum Processing Technology	7	2	26	0	8	0	BTL	54	2020795	DNS	
62	1030333	Technology for Synthesis of Organic Compounds	7	3	30	10	10	0	BTL	85	2020789	DNS	
63	2020420	Petroleum addition and product	7	2	28	0	4	0	0	58	2020795	DNS	
64	1030366	Pipeline engineering and storage system	7	2	30	0	0	0	0	60		DNS	
65	2020442	Specialized Practice in Organic and Petrochemical Technology	7	2	0	0	0	60		30	1030314 2020795	DNS	
66	1030337	Gas Processing Technology	8	2	26	2	4	0	0	58	2020788	DNS	
67	2020430	Fundamental Of Chemical Plant Design	8	3	35	5	10	0	BTL	85		DNS	
68	2020799	Product Research And Development	8	2	28	0	4	0	BTL	58		DNS	
69	2020818	Organic- Petrochemical Engineering Project	8	1	0	0	0	0	ĐA	30	2020889 1030333	DNS	
II.2.2.1b. Elective Courses				8/18									
70	2020817	Product Packaging Technology	8	2	24	4	4	0	0				
71	2020421	Plastic Manufacturing Technology	7	2	22	4	8	0	0	56	2020789	DNS	
72	1030100	Environmental Engineering	7	2	22	4	8	0	0	56	2020788 2020790	DNS	
73	2020422	Waste Management	7	2	24	0	12	0	0	54		DNS	
74	2020431	Technology of Renewable Fuel Production	7	2	24	0	12	0	0	54	2020789	DNS	
75	2020800	Simulation And Optimization Process	8	2	18	10	4	0	0	56	2020794 2020797	DNS	
76	2020434	Cleaner Production	8	2	20	6	8	0	0	56		DNS	
77	2020433	Waste Treatment Engineering	8	2	24	6	0	0	0	60		DNS	
II.2.2.2. Environmental Technology Major				39									
II.2.2.2a. Compulsory Courses				31									
78	1030068	Environmental chemistry	6	2	22	4	8	0	0	56	2020787 2020789	DNS	
79	2020414	Environmental Ecology	6	2	26	0	8	0	0	56		DNS	
80	1030034	Environmental Toxicology	6	2	24	0	12	0	0	54		DNS	
81	2020424	Environmental Monitoring	6	2	26	4	0	0	0	60		DNS	

No	Course Code	Course Name	Semester	Number of credits	Theory	Assignment	Discussion	Experiment/Practice	Others	Self-study Hours	Prerequisite Course Code	Department in Charge	Note
82	2020423	Environmental Protection Law And Policy	7	2	24	0	12	0	0	54	1030068	DNS	
83	1030025	Environmental Impact Assessment (EIA)	7	2	16	12	4	0	0	58		DNS	
84	1030358	Environmental Microbiology	7	2	26	0	8	0	0	56		DNS	
85	2020447	Solid Waste And Hazardous Waste Management	7	2	24	4	4	0	0	58	1030068	DNS	
86	1030101	Water Supply Treatment Engineering	7	2	24	6	0	0	0	60	1030068 2020794	DNS	
87	2020425	Wastewater Treatment Engineering	7	2	24	6	0	0	0	60	1030068 2020794	DNS	
88	2020435	Air And Noise Pollution Control Techniques	8	2	20	8	4	0	0	58	1030068 2020794	DNS	
89	2020443	Environmental Technology Practice	8	2	0	0	0	60		30	1030314	DNS	
90	2020801	Design Of Waste Treatment System	8	3	35	5	10	0		85	2020425 2020447	DNS	
91	2020802	Environmental Aspects of Industrial Production	8	2	20	8	4	0		58	1030068	DNS	
92	2020819	Environmental Engineering Project	8	1	0	0	0	0	ĐA	0		DNS	
II.2.2b. Elective Courses				8/16									
93	1030355	Combined Technologies For Wastewater Treatment	7	2	26	0	8	0	0	56	1030068	DNS	
94	2020426	Health – Safety – Environment	7	2	26	4	0	0	0	60		DNS	
95	2020427	Sustainable energy	7	2	26	0	8	0	0	56	2020789	DNS	
96	2020428	Clean Fuel Production	7	2	24	0	12	0	0	54	2020789	DNS	
97	1030354	ISO 14000 and Environmental Audits	8	2	30	0	0	0	0	60		DNS	
98	2020437	Management And Operation Of Waste Treatment Systems	8	2	26	0	8	0	0	56		DNS	
99	2020438	Construction Engineering	8	2	26	0	8	0	0	56	2020794	DNS	
100	2020439	Clean Production Technology	8	2	20	6	8	0	0	56	2020794	DNS	
II.3. Supplementary Knowledge				33									
101	2020406	Introduction to Engineering of Chemical technology	1	2	20	4	8	4	0	54		DNS	
102	1030314	Laboratory Safety And Techniques	1	1	10	3	0	4	0	28		DNS	
103	1020110	General Physics Laboratory	1	1	0	0	0	30	0	15		DNS	

[illegible]

No	Course Code	Course Name	Semester	Number of credits	Theory	Assignment	Discussion	Experiment/Pra	Others	Self-study Hours	Prerequisite Course Code	Department in Charge	Note
II.4.1. Organic - Petrochemical Technology Major													
125	2020814	Graduation Thesis in Organic-Petrochemical Technology	9	8	0	0	0	0	ĐA	120		DNS	
II.4.2. Environmental Technology Major													
126	2020816	Graduation Thesis in Environmental Technology	9	8	0	0	0	0	ĐA	120		DNS	

9. TENTATIVE TEACHING PLAN

Semester 1

No	Course code	Course Name	Number of credits	Theory	Assignment	Discussion	Experimental/Practical	Others	Self-study Hours	Prerequisite Course Code	Department in Charge	Note
1	1130299	Marxist–Leninist Philosophy	3	40	0	10	0	0	85		DPSLM	
2	2020007	General Physics	2	20	10	0	0	0	56		DNS	
3	1010349	Calculus	3	31	14	0	0	0	90		DMS	
4	1050241	Basic Information	3	24	6	0	30	0	75		DIT	
5	1090061	English 1	3	30	15	0	0	0	90		DFL	
6	2020406	Introduction to Engineering of Chemical technology	2	20	4	8	4	0	54		DNS	
7	1030314	Laboratory Safety And Techniques	1	10	3	0	4	0	28		DNS	
8	1020110	General Physics Laboratory	1	0	0	0	30	0	15		DNS	
9	1120172	<i>Physical Education 1 (Football 1)</i>	1	4	0	0	26	0	21		DNS	

10	1120175	<i>Physical Education 1 (Volleyball 1)</i>	1	4	0	0	26	0	21		DPE	
11	1120178	<i>Physical Education 1 (Basketball 1)</i>	1	4	0	0	26	0	21		DPE	
12	1120181	<i>Physical Education 1 (Badminton 1)</i>	1	4	0	0	26	0	21		DPE	
13	1120184	<i>Physical Education 1 (Vietnamese Traditional Matial Arts 1)</i>	1	4	0	0	26	0	21		DPE	
14	1120187	<i>Physical Education 1 (Taekwondo Matial Arts 1)</i>	1	4	0	0	26	0	21		DPE	
15	1120190	<i>Physical Education 1 (Karatedo Matial Arts 1)</i>	1	4	0	0	26	0	21		DPE	
16	1120239	<i>Physical Education 1 (Pickleball 1)</i>	1	4	0	0	26	0	21		DPE	
		Total	18+ 1									

Semester 2

No	Course code	Course Name	Number of credits	Theory	Assignment	Discussion	Experimental/ Practical	Others	Self-study Hours	Prerequisite Course Code	Department in Charge	Note
1	1130300	Marxist–Leninist Political Economy	2	27	0	6	0	0	57	1130299	DPSLM	

2	1030312	General Chemistry	3	24	15	12	0	0	84		DNS	
3	1010350	Statistics – Numerical Methods	3	30	15	0	0	0	90		DMS	
4	1090166	English 2	4	40	20	0	0	0	120	1090061	DFL	
5	2030003	Communication Skills	2	18	0	20	4	0	48		DSSH	
6	1130049	Introduction to Law	2	27	0	6	0	0	57		DPSLM	
7	1030313	General Chemistry Practice	1	0	0	0	30	0	15	1030314	DNS	
8	1120173	<i>Physical Education 2 (Football 2)</i>	1	4	0	0	26	0	21	1120172	DPE	
9	1120176	<i>Physical Education 2 (Volleyball 2)</i>	1	4	0	0	26	0	21	1120175	DPE	
10	1120179	<i>Physical Education 2 (Basketball 2)</i>	1	4	0	0	26	0	21	1120178	DPE	
11	1120182	<i>Physical Education 2 (Badminton 2)</i>	1	4	0	0	26	0	21	1120181	DPE	

12	1120185	<i>Physical Education 2 (Vietnamese Traditional Matial Arts 2)</i>	1	4	0	0	26	0	21	1120184	DPE	
13	1120188	<i>Physical Education 2 (Taekwondo Matial Arts 2)</i>	1	4	0	0	26	0	21	1120187	DPE	
14	1120191	<i>Physical Education 2 (Karatedo Matial Arts 2)</i>	1	4	0	0	26	0	21	1120190	DPE	
15	1120240	<i>Physical Education 2 (Pickleball 2)</i>	1	4	0	0	26	0	21	1120239	DPE	
		Total	17+ 1									

Semester 3

No	Course code	Course Name	Nu mbe r of cred its	The ory	Assi gnm ent	Disc ussi on	Experim ental/ Practical	Othe rs	Self- stud y Hou rs	Prerequi site Course Code	Department in Charge	Note
1	1130301	Scientific Socialism	2	27	0	6	0	0	57	1130300	DPSLM	
2	1160838	Electronics Engineering	2	18	6	0	12	0	54	2020007	DET	
3	2020787	Applied inorganic chemistry	3	26	4	0	30	0	75	1030312	DNS	
4	2020788	Applied physical chemistry	3	35	8	4	0	0	88	1030312	DNS	

Semester 4

No	Course code	Course Name	Number of credits	Theory	Assignment	Discussion	Experimental/Practical	Others	Self-study Hours	Prerequisite Course Code	Department in Charge	Note
1	1130302	History of the Communist Party of Vietnam	2	27	0	6	0	0	57	1130301	DPSLM	
2	1160596	Electrical Techniques	2	16	4	0	20	0	50	2020007	DET	
3	2020147	Time Management and Teamwork Skills	2	21	0	18	0	0	51		DNS	
4	2020793	Heat Transfer Processes and Equipment	2	22	6	4	0	Major Assignment	56	2020792	DNS	
5	2020789	Applied Organic chemistry	3	30	0	0	30	0	75	1030312 1030314	DNS	
6	2020790	Applied Analytical Chemistry	3	23	5	4	30	0	73		DNS	
7	2020412	Statistics and Chemometrics	2	14	2	0	28	0	46		DNS	
8	1120168	<i>National Defense and Security Education 1</i>	3	37	0	16	0	0	82		DPE	
9	1120096	<i>National Defense and Security Education 2</i>	2	22	0	16	0	0	52		CNDSE	

10	1120170	<i>National Defense and Security Education 3</i>	2	14	0	0	32	0	44		CNDSE	
11	1120171	<i>National Defense and Security Education 4</i>	2	4	0	0	52	0	34		CNDSE	
		Total	16+ 9									

Semester 5

No	Course code	Course Name	Number of credits	Theory	Assignment	Discussion	Experimental/Practical	Others	Self-study Hours	Prerequisite Course Code	Department in Charge	Note
1	1130091	Ho Chi Minh Thought	2	27	0	6	0	0	57	1130302	DPSLM	
2	1150422	Entrepreneurship	2	20	5	10	0	0	55	1130049	DFBA	
3	1160839	Mechanical Engineering	2	20	10	0	0	0	60		DET	
4	2020411	Techniques for sampling, handling and preserving of samples	2	24	4	4	0	0	58		DNS	
5	2020794	The Process and Equipment of Mass Transfer	3	36	6	6	0	BTL	86	2020792	DNS	
6	2020804	Chemical and Food Technology Processes and Equipment Practice	1	0	0	0	30	0	15	1030314 2020793	DNS	

7	1030327	English In Chemical Technology	2	26	0	8	0	0	56	1090166	DNS	
8	2020791	Modern analytical methods	3	30	0	0	30	0	75	2020790	DNS	
		Total	17									

Semester 6

No	Course code	Course Name	Number of credits	Theory	Assignment	Discussion	Experimental/Practical	Others	Self-study Hours	Prerequisite Course Code	Department in Charge	Note
	Organic - Petrochemical Technology Major											
1	2020415	Occupational Safety and Industrial Hygiene	2	28	0	4	0	0	58		DNS	
2	1030325	Automation control and measurement engineering in chemical	3	36	6	6	0	0	87		DNS	
3	2020805	Chemical Engineering Unit Operations Design	1	0	0	0	0	DA	0	2020794	DNS	
4	2020806	Basic Engineering Internships At Plant	2	0	0	0		TT	0	2020794	DNS	
5	2020795	Fuel Chemistry	2	26	0	8	0	0	56	2020789	DNS	

6	2020796	Industrial Biochemistry	2	28	4	0	0	0	60	2020789	DNS	
7	1150423	Production management	2	23	5	4	0	0	58	1130002	DFBA	
8	2020418	Reaction Engineering and Equipment	3	30	10	10	0	0	85	2020794	DNS	
		Total	17									

Semester 6

No	Course code	Course Name	Number of credits	Theory	Assignment	Discussion	Experimental/Practical	Others	Self-study Hours	Prerequisite Course Code	Department in Charge	Note
	Environmental Technology Major											
1	2020415	Occupational Safety and Industrial Hygiene	2	28	0	4	0	0	58		DNS	
2	1030325	Automation control and measurement engineering in chemical	3	36	6	6	0	0	87		DNS	
3	2020805	Chemical Engineering Unit Operations Design	1	0	0	0	0	Project	0	2020794	DNS	
4	2020806	Basic Engineering Internships At Plant	2	0	0	0		Internship	0	2020794	DNS	
5	1030068	Environmental chemistry	2	22	4	8	0	0	56	2020787	DNS	

										2020789		
6	2020414	Environmental Ecology	2	26	0	8	0	0	56		DNS	
7	1030034	Environmental Toxicology	2	24	0	12	0	0	54		DNS	
8	2020424	Environmental Monitoring	2	26	4	0	0	0	60		DNS	
9	2020807	Environmental Monitoring and Quality Analysis Laboratory	1	0	0	0	30	0	0	1030068 2020424	DNS	
		Total	17									

Semester 7

No	Course code	Course Name	Number of credits	Theory	Assignment	Discussion	Experimental/Practical	Others	Self-study Hours	Prerequisite Course Code	Department in Charge	Note
	Organic - Petrochemical Technology Major											
1	2020429	Management Product Quality and Production	2	24	4	4	0	0	58	1150423	DNS	
2	2020798	Petroleum Processing Technology	2	24	0	12	0	Major Assignment	54	2020795	DNS	
3	1030333	Technology for Synthesis of Organic Compounds	3	30	10	10	0	Major Assignment	85	2020789	DNS	
4	2020420	Petroleum addition and product	2	28	0	4	0	0	58	2020795	DNS	
5	1030366	Pipeline engineering and storage system	2	24	6	0	0	0	60		DNS	

6	2020442	Specialized Practice in Organic and Petrochemical Technology	2	0	0	0	60		30	1030314 2020795	DNS	
7	2020808	Enterprise Connection Skills	2	28	0	4	0	0	58	2020147	DNS	
8	2020817	Product Packaging Technology	2	24	4	4	0	0	58		DNS	
9	2020421	Plastic Manufacturing Technology	2	22	4	8	0	0	56	2020789	DNS	
10	1030100	Environmental Engineering	2	22	4	8	0	0	56	2020788 2020790	DNS	
11	2020422	Waste Management	2	24	0	12	0	0	54		DNS	
		Total	19									

Semester 7

No	Course code	Course Name	Number of credits	Theory	Assignment	Discussion	Experimental/Practical	Others	Self-study Hours	Prerequisite Course Code	Department in Charge	Note
	Environmental Technology Major											
1	2020423	Environmental Protection Law And Policy	2	24	0	12	0	0	54	1030068	DNS	
2	1030025	Environmental Impact Assessment (EIA)	2	16	12	4	0	0	58		DNS	

3	1030358	Environmental Microbiology	2	26	0	8	0	0	56		DNS	
4	2020447	Solid Waste And Hazardous Waste Management	2	24	4	4	0	0	58	1030068	DNS	
5	1030101	Water Supply Treatment Engineering	2	24	6	0	0	0	60	1030068 2020794	DNS	
6	2020425	Wastewater Treatment Engineering	2	24	6	0	0	0	60	1030068 2020794	DNS	
7	1030097	Environmental Economics	2	20	8	4	0	0	58		DNS	
8	1030355	Combined Technologies For Wastewater Treatment	2	26	0	8	0	0	56	1030068	DNS	
9	2020426	Health – Safety – Environment	2	26	4	0	0	0	60		DNS	
10	2020427	Sustainable energy	2	26	0	8	0	0	56	2020789	DNS	
11	2020428	Clean Fuel Production	2	24	0	12	0	0	54	2020789	DNS	
		Total	18									

Semester 8

No	Course code	Course Name	Number of credits	Theory	Assignment	Discussion	Experimental/Practical	Others	Self-study Hours	Prerequisite Course Code	Department in Charge	Note
Organic - Petrochemical Technology Major												
1	1030337	Gas Processing Technology	2	26	2	4	0	0	58	2020788	DNS	
2	2020430	Fundamental Of Chemical Plant Design	3	35	5	10	0	Major Assignment	85		DNS	

3	2020799	Product Research And Development	2	28	0	4	0	BTL	58		DNS	
4	2020809	Practice research and product development	1	0	0	0	30	0	15	2020799	DNS	
5	2020810	Construction and Management of Technology projects	2	26	0	8	0	0	BTL		DNS	
6	2020818	Organic- Petrochemical Engineering Project	1	0	0	0	0	DA	30	2020789 1030333	DNS	
7	2020811	Chemical Engineering Internship At Plant	2	0	0	0		TT	0	2020806	DNS	
8	2020431	Technology of Renewable Fuel Production	2	24	0	12	0	0	54	2020789	DNS	
9	2020800	Simulation And Optimization Process	2	18	10	4	0	0	56	2020794 2020797	DNS	
10	2020434	Cleaner Production	2	20	6	8	0	0	56		DNS	
11	2020433	Waste Treatment Engineering	2	24	6	0	0	0	60		DNS	
		Total	17									

Semester 8

No	Course code	Course Name	Number of	Theory	Assignment	Discussion	Experimental/Practical	Others	Self-study	Prerequisite	Department in Charge	Note
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			credits						Hours	Course Code		
	Environmental Technology Major											
1	2020435	Air And Noise Pollution Control Techniques	2	20	8	4	0	0	58	1030068 2020794	DNS	
2	2020441	Construction and Management of Environment Projects	2	22	4	8	0		56		DNS	
3	2020443	Environmental Technology Practice	2	0	0	0	60		30	1030314	DNS	
4	2020801	Design Of Waste Treatment System	3	35	5	10	0		85	2020425 2020447	DNS	
5	2020812	Environmental Engineering Internship At Plant	2	0	0	0		Inter nship	0	2020806	DNS	
6	2020802	Environmental Aspects of Industrial Production	2	30	0	0				1030068	DNS	
7	2020819	Environmental Engineering Project	1	0	0	0	0	Proje ct	0		DNS	
8	1030354	ISO 14000 and Environmental Audits	2	30	0	0	0	0	60		DNS	
9	2020437	Management And Operation Of Waste Treatment Systems	2	26	0	8	0	0	56		DNS	
10	2020438	Construction Engineering	2	26	0	8	0	0	56	2020794	DNS	
11	2020439	Clean Production Technology	2	20	6	8	0	0	56	2020794	DNS	
		Total	18									

Semester 9

10. GUIDELINES FOR TRAINING PROGRAM IMPLEMENTATION

- This training program is applicable starting from the 2025 admission cohort for students majoring in Chemical Engineering Technology.

- The training process is based on the designed curriculum, training objectives, target audience, human resource requirements, and specific training demands. Regarding elective courses, depending on actual developmental trends and societal needs, the Faculty will advise students on selecting appropriate courses.

- The Dean of the Faculty is responsible for organizing and guiding the principles for developing detailed course syllabi to ensure that objectives, content, and requirements are met, while satisfying the needs of both learners and society.

- The training program is regularly reviewed to align with the development of the Chemical Engineering Technology field and socio-economic development needs.

Gia Lai, August 01, 2025

RECTOR

Assoc. Prof. Dr. Doan Duc Tung