

5.2 Training Program Learning Outcomes



MINISTRY OF EDUCATION AND TRAINING
NONG LAM UNIVERSITY – HO CHI MINH CITY
 Address: Quarter 6, Linh Trung ward, Thu Duc city, Ho Chi Minh City
 Phone: 028.38966780 – 028.38963350

Ho Chi Minh City, [date] 2024

TRAINING PROGRAM LEARNING OUTCOMES
FULL-TIME UNIVERSITY DEGREE
Field of study: ENVIRONMENTAL SCIENCE

- Name of the training program: Environmental Sciences
- Industry code: 7440301
- Type of training: Full-time
- Training duration: 4 years
- Degree: Engineer

1. Output standards

In addition to general requirements regarding professional ethics, adherence to occupational safety principles, political theory knowledge, national defense and security knowledge as prescribed by current regulations, and achieving basic information technology skills standards as prescribed by the Ministry of Information and Communications, graduates of each level of higher education must meet the following minimum competency requirements:

1.1 Knowledge

(Knowledge requirements: In-depth theoretical knowledge in the field of training; mastery of techniques and practical knowledge to solve complex tasks; accumulation of foundational knowledge of basic principles, natural and social laws in the field of training and development of new knowledge and ability to continue learning at a higher level; knowledge of management, operation, law and environmental protection related to the field of training).

Based on the minimum knowledge requirements that students must achieve upon graduation, the Environmental Science training program specifies the knowledge into program-level learning outcomes. *Programme Learning Outcomes* – (abbreviated as “PLOs”):

1.1.1 General knowledge

PLO1: Applying fundamental knowledge of natural sciences and statistical mathematics to learn basic subjects in the field and calculate/solve problems related to Environmental Science.

PLO2:Applying fundamental knowledge of social sciences and humanities, politics, law, foreign languages, and information technology to learn core subjects in the field and solve problems related to Environmental Science.

1.1.2 Professional knowledge

PLO3: Manipulate foundational knowledge about ecology, biodiversity, biotechnology, and environmental chemistry to analysis and interpretation the basic environmental processes and issues in natural and social systems.

PLO4: Applying knowledge of laws, policies, planning, and natural resource management to participate in the development, organization, and monitoring of sustainable development and environmental protection programs and plans in practice.

PLO5: Operate the wastewater treatment system, solid waste treatment system, air pollution control system, and water supply system. correct technical procedures, Complies with current environmental standards and regulations.

PLO6: Accumulate and apply professional experience gained through specialized internships.; using specialized English to read, understand, and utilize specialized environmental literature.

PLO7: Transport knowledge about applied environmental science, environmental toxicology, GIS, statistics, ISO 14000, and environmental auditing to analyze, evaluate, and propose effective management solutions; give environmental projects and activities.

1.2 Skills

1.2.1 Generic skills

PLO8: Planning and implementation activities scientific research and career guidance, response recruitment requirements and sustainable career development in environmental sector.

1.2.2 Professional skills

PLO9: Perform the environmental experiment in a way safe and proper procedures; collect, process, interpret, and evaluate scientific data; simultaneously applying soft skills like teamwork, negotiation, and sociological research in a professional context.

PLO10: Analysis and evaluation issues related to natural resources, climate change, and sustainable development to proposing integrated management solutions and efficient utilization of natural resources.

PLO11: Applying comprehensive knowledge about the environment. to perform independently one scientific research topic (thesis or essay), meeting the requirements academic requirements and research methods.

1.3 Attitude

PLO12: Applying knowledge of physical education and national defense and security education to cultivate mental and physical health, and a sense of responsibility in building and protecting the community, locality, and nation.

2. The correlation and consistency between Program Objectives (POs) and Program Learning Outcomes (PLOs)

Table 1. Classification of program learning outcomes for Environmental Science majors

PO s	PLOs											
	1	2	3	4	5	6	7	8	9	10	11	12
1	1	1	4				4			5		
2					4		4		5			
3				4			4			5	5	
4						4		2				3

PLO 01, 02,, PLOs: Program Learning Outcome

POs: Program Objectives.

Note (Legend)

1	General knowledge	4	Professional knowledge
2	General skills	5	Professional skills
3	Attitude		

Table 2. Matrix of the level of contribution of course modules to expected learning outcomes.

No.	Course code	Course name	No. of Credit	PLOs (Programme Learning Outcomes)											
				PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11	PLO12
1. Basic knowledge block															
Compulsory course modules															
1	200101	Marxist-Leninist Philosophy	3		M										
2	202112	Advanced Mathematics B1	2	M											
3	202201	Physics 1	2	M											
4	202401	General Biology	2	R		I			I				I		
5	202402	General Biology Practice	1	R								I			
6	202501	Physical Education 1*	1	R						R	R	R			
7	213603	English 1*	4							I	M		I	I	
8	214103	Introduction to Computer Science*	3	M											
9	200102	Marxist-Leninist Political Economy	2		M										
10	200201	Military 1 (theory)*	3		M									M	
11	200202	Military 2 (Practical)*	3		M									M	
12	202113	Advanced Mathematics B2	2	M											
13	202301	General Chemistry	3	M											
14	202304	Chemical Experiment	1	M											
15	202502	Physical Education 2*	1	R						R	R	R			
16	202622	General Law	2		M		R								
17	213604	English 2*	3							I	M		I	I	
18	200103	Scientific socialism	2		M										
19	202121	Probability and Statistics	3	M								M			
20	200107	Ho Chi Minh Thought	2		M										
21	200105	History of the Communist Party of Vietnam	2		M										
Add			47												

No.	Course code	Course name	No. of Credit	PLOs (Programme Learning Outcomes)											
				PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11	PLO12
2. Fundamental knowledge block of the major															
Compulsory course modules															
1	212111	Basic Environmental Science	2	I			R						R	R	
2	218101	Geographic Information System	3	I	I				I	M		M			
3	212104	Environmental ecology	2			M	M							R	R
4	212105	Environmental biotechnology	2	I	I	R	R	R	R	R	I	R	R	R	
5	212201	Environmental Chemistry (A)	2												
6	212207	Physical chemistry	2	M	R	M			M	R	M	M	R	R	
7	212328	Environmental Science Research Program	2	I		R	R					M	R	M	R
8	212928	Biodiversity	2			M	M							R	I
9	212933	Environmental laboratory techniques	2	I								R			
10	212937	Advanced environmental microorganisms	3			R		R	R						
11	212327	Environmental modeling	2	I		R	I	R		I	I				
12	212522	Environmental monitoring	2				M	M	R		R	R	R	R	
Add			26												
Compulsory elective course group 0201 - Minimum required credits: 2 credits															
1	212301	Negotiation skills	2	I	M	R	M	M	R	M	R	M	M	M	M
2	212302	Descriptive geometry	2	I	R	R	M			R		M	M	R	M
Add			4												
Compulsory elective course group 0202 - Minimum required credit: 2 credits															
1	212331	Technical drawing	3	I	R	R	M			R	M	M	M	R	M
2	212557	General Environmental Quality Management	2			R	R	R	R		I	R	R		
3	212927	Sociological research skills	2	I	R	R				R	M	M	R	R	
4	216104	Landscape ecology	2			I	I						I		
Add			9												

No.	Course code	Course name	No. of Credit	PLOs (Programme Learning Outcomes)											
				PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11	PLO12
3. Specialized knowledge area															
Compulsory course modules															
1	212530	Water resource management	2										M	M	
2	212318	Environmental planning	2	I	M	M	M	R	I	M	R	M	M	R	I
3	212504	Environmental Law & Policy	2	I	M	M	M	M	I	M	I	I	M	M	I
4	212617	Ecological technology (A)	2	I		M		M	M				M	R	
5	212939	Internship 1	1					M	R		I			M	
6	212926	Earth science	2	I	I	M							M	R	
7	212930	Environmental analysis	3	I		I						R			
8	212338	Solid and hazardous waste management	2	I	R	R	M			R	M	M	M	R	M
9	212514	Emission control and noise reduction	3	I	I	R	R	M	M	R	R	R	R	R	
10	212931	English for Specific Purposes (A)	2						M, A						
11	212935	Environmental bioindicators	3	I	I	R	I	R	R	R	R	R	R	R	
12	212112	Wastewater treatment techniques	3		R	R	M			R	R	M	M	R	
13	212113	Solid waste treatment techniques	3	I	R	R	M			R	R	M	M	R	
14	212940	Internship 2	1	I	R	R	M			R	M	M	M	R	
15	212402	Environmental Toxicology	2	I	R	R	R	M	M		R	R	R	R	
16	212914	Internship	2			I	M	R	R		R	R	M		
17	212916	Applied Environmental Science (A)	3			R, A	R, A		M, A			R, A	R, A		
18	212918	Applied Computer Science Project	2			R	R			M	M	R		M	
Add			40												
Compulsory elective course group 0301 - Minimum credit requirement: 6 credits															
1	212316	Cleaner production	2	I	M	M	M	M	I	M	I	I	M	M	
2	212503	Environment and community health	2	M	R	M	M	I	I	M	M	M	M	M	M
3	212547	Renewable energy	2	I	R	R	R	M	M		R	R	R	R	

No.	Course code	Course name	No. of Credit	PLOs (Programme Learning Outcomes)											
				PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11	PLO12
4	212604	Plant resources	2			I	I						I		
5	212932	Natural resource management	2										M	M	
6	218301	Sustainable use of natural resources	3										M	M	
<i>Add</i>			<i>13</i>												
Compulsory elective course group 0302 - Minimum required: 13 credits															
1	212107	Climate change	2			M				M	R		R		
2	212307	Water treatment technology	3	I	R	I	I	I						I	I
3	212332	Water supply network	2			I	I							I	I
4	212509	environmental economics	2			I	R	M	R		I	R	R		
5	212518	Coastal resource management	2									R	R		
6	212520	Land resource management	2				I					R			
7	212528	Resource economics	2				R						R	R	
8	212611	Ecotourism	2		M		R				M			M	
9	218317	Agricultural and environmental chemicals	3							M					
<i>Add</i>			<i>20</i>												
Compulsory elective course group 0303 - Minimum required: 10 credits															
1	212108	GIS in environmental management	2	I	I	I			I	M		M	I		
2	212507	Environmental impact assessment	2	I	M	M	M	M	I	M	I	I	M	M	
3	212517	Forest resource management	2			M	M							R	R
4	212525	Greenhouse gas management	2										R	R	
5	212526	ISO 14000	2	M	M	I	M	M	M	R	R	M	M	M	R
6	212531	Environmental audit	2			I	R		I			R		I	
7	212908	Environmental management and sustainable development	3	M	M	I	M	M	R	M	M	M	M	M	M
8	212913	Job search skills	1		I		I							M	
<i>Add</i>			<i>16</i>												
Compulsory elective course group 0304 - Minimum required: 12 credits															

No.	Course code	Course name	No. of Credit	PLOs (Programme Learning Outcomes)											
				PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11	PLO12
1	212919	Graduation thesis	12	M		M	M	M			M	M	M	M	
2	212920	Graduation Essay	6	M		M	M	M			M	M	M	M	
3	212934	Statistics applied in Computer Science	2	M	R			M		R	I	R	M	M	
4	212936	Environmental restoration	2	I		M		M	M			M	R	R	
5	212938	Academic writing methods	2						R			R			
<i>Add</i>			<i>24</i>												

Note:

- I (Introduced): Supported in achieving PLO and at the introductory/beginner level;
- R (Reinforced): Provides support for achieving PLO and is at a higher level than the beginner level, with more opportunities for practice, experimentation, and real-world experience, etc.
- M (Mastery): Highly supported in achieving PLO and at a proficient/understanding level.

3. Career opportunities

The Environmental Science program equips students with the knowledge and skills to meet the demands of the job market:

- Government agencies operating in the environmental field.
- Companies, businesses, export processing zones, industrial parks
- Foreign company
- Non-governmental organizations
- Establish your own company to provide consulting, design, and operation services for environmental treatment facilities.

4. Opportunities for further learning and professional development after graduation.

Graduates in Environmental Science can pursue higher education or go abroad to study for master's and doctoral degrees.

DEAN OF FACULTY