I. PROGRAM OBJECTIVES AND EXPECTED LEARNING OUTCOME (ELO)

1.1. Program objective

The fertilizer and plant nutrition program trains staff with professional competence, professional ethics, the ability to work independently and apply learned knowledge to solve problems in the field of fertilizer and plant nutrition.

Specific objectives

Graduated student in the field of Fertilizer and Plant Nutrition become

Program objective 1 (PO1): Managers and professionals working in the field of plant nutrition, management, use, production and trading of fertilizers;

Program objective 2 (PO2): Solve practical problems in the fertilizer and plant nutrition industry, serving efficient and sustainable agricultural production;

Program objective 3 (PO3): Love the job, be responsible at work, respect colleagues and have professional ethics.

1.2. Expected Learning Outcome (ELO)

Upon completion of the training program, students have the following knowledge, skills, attitute:

Content	Expected Learning Outcome (ELO)
General knowledge	ELO1. Apply knowledge of mathematics, natural sciences, politics, society and humanities in the field of fertilizers and plant nutrition;
	ELO2. Apply knowledge of mathematics, natural sciences, politics, society and humanities in the field of fertilizers and plant nutrition;
Professional knowledege	ELO3: Assess the current status of fertilizer use and management and crop nutrition to solve practical problems;
	ELO4: Planning to implement the process of testing, assessing quality and trading fertilizers to serve the tasks of the Fertilizer and Plant Nutrition industry;
General skills	ELO5: Applying critical and creative thinking to solving research and technology transfer problems in the Fertilizer and Plant Nutrition industry effectively;
	ELO6: Team work and lead the team to achieve set goals;

	ELO7: Communicate effectively orally, in writing, and in multimedia with stakeholders in a diverse, multicultural environment and fluently in English;
Professional skills	ELO8: Proficiently use professional equipment to effectively analyze the quality of fertilizers, crops, soil, water and production processes of some fertilizers;
	ELO9: Proficiently implementing the steps of developing and implementing fertilization procedures for some popular crops in order to manage nutrients and effectively use fertilizers for plants;
	ELO10: Coordinated application of surveying, information processing and management skills in fertilizer use, production and trading;
Attitute	ELO11: Complying with the law, respecting the organization's culture, professional ethical standards, responsibility in resource management and environmental protection for sustainable development;
	ELO12: Figure out a clear future orientation, passion for career and a sense of lifelong learning.

II. CAREER ORIENTATION AFTER GRADUATION

Graduates from the field of Fertilizer and Plant Nutrition can work in the following positions and fields:

+ Managers, sales and technicians at fertilizer production and trading units and enterprises operating in the agricultural sector;
+ Managers and specialists working at specialized agencies of the Ministry of Agriculture and Rural Development, the Ministry of Natural Resources and Environment, the Ministry of Science and Technology, the Departments of Agriculture and Rural Development, and the Ministry of Agriculture and Rural Development. province, city; the Agriculture Departments, General Economic Departments of districts, cities and towns;
+ Professional officers at commune level
+ Researcher at research institutes on soil, fertilizer and plants;

+ Teachers teach subjects on agrochemistry and fertilizers of all levels in accordance with regulations at universities, agricultural intermediate schools, natural resources and environment.
+ Analytical technicians in soil, water, fertilizer and environmental analysis laboratories.
+ Managers or specialists at fertilizer testing and testing units.

III. ORIENTATION FOR ADVANCED LEARNING AFTER GRADUATION

Graduated students from the field of Fertilizer and Crop Nutrition can continue to study to improve their qualifications at home and abroad in the following disciplines and majors:

+ Master program in Soil Science;
+ Master program of Environmental Science;
+ Master program of Science in Crop Science
+ Doctor program in Soil Science;
+ Doctor program in Environmental Science.
+ Doctor program in Crop Science

IV. PROGRAM CONTENT (NAME AND VOLUME OF MODULES):

No	Year	Code	English name	Total	Theory	Practice	Compulsory	Previous Course	Code
TOTAL GENERAL COURSES				**40**					
1	1		Maxism – Lennism + Foreign Languages	16			x		
2	1	ML01009	*Introduction to laws*	2	2	0	x		
3	1	MT01004	Analytic chemistry	2	1.5	0.5	x	Basic chemistry	MT01001
4	1	TH01007	Probability and statistics	3	3	0	x		
5	1	MT01001	Basic chemistry	2	1.5	0.5	x		
6	1	SH01001	Basic biology	2	1.5	0.5	x		
7	1	NH02019	Basic crop science	3	2	1	x		
8	1	MT02033	Basis microbiology	2	1.5	0.5	x		
9	1	KQ03107	*Basic of marketing 1*	2	2	0	x		
10	1	SN01023	*Scientific aprroach methodologies*	2	1.5	0.5			
11	1	MT01008	*Ecology - Environment*	2	2	0			
12	1	MT01002	*Organic chemistry*	2	1.5	0.5		Basic chemistry	MT01001
13	1	QL02005	*Geology*	3	2	1			
14	1	NH03027	*General plant protection*	2	1.5	0.5			
15	1	QL03053	*Applied Informatics in Mapping*	2	1	1			
TOTAL BASED MAJOR COURSES				**20**					
16	2	MT01006	Agrometeorology	2	1.5	0.5	x		
17	2	NH02003	Plant physiology	3	2	1	x		
18	2	NH02005	*Design of experiments*	2	0.5	1.5	x		

No	**Year**	Code	English name	Total	Theory	Practice	Compulsory	Previous Course	Code
19	2	MT02003	*Environmental chemistry*	2	1.5	0.5	x	Basic chemistry	MT01001
20	2	QL02008	*General Pedology*	2	1.5	0.5	x	Basic chemistry	MT01001
21	2	QL02041	*Irrigation and drainage*	2	1.5	0.5	x		
22	2	QL02007	*Soil chemistry*	3	2	1	x	*General Pedology*	QL02008
23	2	NH03055	*Extension*	2	1.5	0.5			
24	2	QL03048	*Chemicals application in agricultre and envỉonment*	2	2	0			
25	2	NH03025	Intergrated pest management	2	1,5	0,5			
TOTAL MAJOR COURSES				**70**					
26	3	SN03054	*English for Land Management*	2	2	0	x	Tiếng anh 2	
27	3	QL02009	*Specialized Pedology*	2	1.5	0.5	x	*General Pedology*	QL02008
28	3	QL03043	*Fertilizer*	2	1.5	0.5	x		
29	3	QL03044	*Scientific basis of fertilization*	3	2	1	x	*Fertilizer*	QL03043
30	3	QL03014	*Land evaluation*	2	2	0	x		
31	3	QL03019	*Soil and water analysis*	3	1	2	x		
32	3	QL03045	*Fertilizer and plant analysis*	2	0.5	1.5	x	*Fertilizer*	QL03043
33	3	QL03023	*Fertilizer application for plant 1*	2	1.5	0.5	x	*Fertilizer*	QL03043
34	3	QL03065	*Soil and Agrochemistry mapping*	3	2	1	x		
35	3	QL03063	*Agrochemistry for soil reclaimation*	2	1.5	0.5	x	*Fertilizer*	QL03043
36	3	QL03017	*soil fertility*	2	2	0	x		
37	3	QL03068	*Fertilizer application for plant 2*	2	1,5	0,5	x	*Fertilizer*	QL03043

No	**Year**	Code	English name	Total	Theory	Practice	Compulsory	Previous Course	Code
38	**3**	QL04016	*Fieldtrips*	8	0	8	x		
39	**3**	Ql04017	*Fieldtrips*	12	0	12	x		
40	3	QL03064	*Intergrated crop nutrition management*	2	1	1	x	*Fertilizer application for plant 1*	QL03023
41	3	NH02030	*Cultivation*	2	1.5	0.5	x		
42	3	QL03047	*Biological indicators for environment*	2	2	0	x		
43	4	QL04996	*Thesis of Agrochemistry*	10	0	10	x	*Fieldtrips*	Ql04017
44	4	QL03087	Land use planning	2	2	0			
46	4	QL03067	*Soilless culture*	1	1	0		*Fertilizer*	QL03043
47	4	KT03037	*Agricultural statistics*	3	3	0			
48	4	QL03069	*Application growth substance in agriculture*	2	1,5	0,5			
49	4	QL03036	*Agrocultural Planning*	2	1.5	0.5			