

## GRADUATE TRAINING PROGRAM

Program name: **Environmental Science** (Research Program)

Education level: **Master**

Specialization: **Environmental Science**

Specialization code: **8 44 03 01**

Type of training: **Regular/Full-time**

*(Issued by Decision No. 201. signed on .../.../2018 by the President of Vietnam National University of Agriculture)*

### 1. Training objectives

#### 1.1. General objective

Training at the master's level in Environmental science provides theoretical knowledge, professional skills, ability to work independently and creative ability in solving problems related to technology - engineering in management. environmental management, natural resource management and climate change response. The program provides high-quality human resources for employment positions at state management agencies in charge of environment, universities, research institutes and enterprises operating in the territory of Vietnam.

#### 1.2. Specific objectives

Graduated student in the field in Environmental Science

**Program objective 1 (PO1):** Systematizing environmental issues through the theoretical knowledge base related to the fields of management, engineering and technology.

**Program objective 2 (PO2):** Analysing the environmental systems and applications in pollution control, suitable use of resources and response to climate change.

**Program objective 3 (PO3):** Mastering the organizing skills, planning research work, working independently

**Program objective 4 (PO4):** Forming personal characteristics and attitudes in environmental protection and sustainable development.

## **2. Expected Learning Outcome (ELO)**

Completing the training program in Environmental Science, learners have the following knowledge, skills, and capacity for autonomy and responsibility:

### **2.1. Knowledge**

#### **2.1.1. General knowledge**

**ELO1:** Understand the system of scientific knowledge and basic principles of Marxism - Leninism; Ho Chi Minh Thought; Policies and guidance of the Party, State and laws.

#### **2.1.2. Professional knowledge**

**ELO2:** Analyze the processes of material transformation; toxic elements in the environmental components of soil, water, and air.

**ELO3:** Application of tools in pollution control for waste forms (solid, liquid, gas), environmental management based on management tools (policy, economy, information and communication).

**ELO4:** Identifying environmental issues and risks of development activities affecting the environment as a basis for building a risk management program for production facilities and areas waste reception and natural resource management.

**ELO5:** Assessment of pollution levels for wastes (exhaust gas, wastewater and solid waste) for waste generation or treatment facilities.

**ELO6:** Evaluate the thematic reports in the field of natural resources and environment (strategic environmental assessment report, environmental impact assessment report, Work completion confirmation, environmental protection scheme...).

**ELO7:** Modeling in research, response and prevention scenarios to climate change and disaster risks.

### **2.2. Skill**

#### **2.2.1. General skills**

**ELO8:** Proficiently use of specialized software for the environmental field in relation to GIS, Remote Sensing, Modeling and statistical data processing (Stella, GIS, Statgraphic...).

**ELO9:** Meet the English requirement at B1 level according to the European Standard or equivalent.

**ELO10:** Read, understand and write documents in English related to the environment issues.

### **2.2.2. Professional skills**

**ELO11:** Establish an investigation plan for environmental management and response to climate change and disaster risks.

**ELO12:** Assessment of environmental data and information.

**ELO13:** Make decisions related to solutions for the rational use and management of natural resources.

**ELO14:** Develop research skills in environmental communication and research.

### **2.3. Attitude**

**ELO15:** Responsible for research results and published conclusions.

**ELO16:** Professional guidance in the formulation and implementation of plans for environmental protection and pollution remediation of production facilities.

**ELO17:** Promoting collective intelligence in management and professional activities.

**2. Training period: 1.5 - 2 years**

**3. Total knowledge of the whole course: Total 60 credits**

**4. Eligible candidates:**

**4.1. Right, suitable training program**

Environmental science; Environmental engineering; Environmental Technology; Environmental Management; Natural Resource Management and Environment.

**4.2. Closed/relevant training program**

**Group 1:** Soil Science; Natural resource management; Water resource management; Water resource engineering; Environmental chemistry; Chemical engineering; Biotechnology; Food Technology, Meteorology, Hydrology, Geography, Geology, Plant Protection, Agrochemistry, Aquaculture, Animal Husbandry, Irrigation, Forestry.

**Group 2:** Plant science; Technical pedagogy; Veterinary Medicine; Chemistry pedagogy; Pedagogy of birth; Land Management; Cadastral; The law; International law; Agricultural economy; Economic management; Mechanical, Electromechanical, Information Technology

**The knowledge that needs to be supplemented for the closed/relevant group of training program (1 and 2)**

No	Subject	Credit	Group 1	Group 2
1	Environmental pollution	2	x	x
2	Principal Ecology	2	x	x
3	Environmental technology	2	x	x
4	Environmental impact assessment	2		x
5	Environmental Management	2		x

#### **4.3. Entrance Exams Subjects**

Environmental pollution; Environmental management, English

#### **5. Training process, graduation conditions:**

Based on the Decision No. 4581/QĐ-HVN, signed on November 10, 2017 re: Regulations on Master's training at Vietnam Academy of Agriculture by the President of Vietnam University of Agriculture.

**6. Scale:** Bench scale 10 (the score then converted to a scale of 4)

**7. Program content (name and volume of modules):**

No	Code	English name	Total	Theory	Practice	Compulsory	Elective
		<b>Total of fundamental credits</b>	<b>10</b>			<b>10</b>	<b>0</b>
1	ML06001	Marxism and Leninism Philosophy	3	3	0	x	
2	SN06003	English	2	2	0	x	
3	MT06019	Environmental system analysis	3	3	0	x	
4	MT07059	Toxicology in environmental and control	2	2	0	x	
		<b>Total of specialized basic credits</b>	<b>11</b>			<b>11</b>	<b>0</b>
5	MT06020	Climate Change and Environment	3	2	1	x	
6	MT07051	Air quality control	2	2	0	x	
7	MT07054	Water quality and its control	3	2,5	0,5	x	
8	MT07055	Microbial technology for Environmental Treatment	3	3	0	x	
		<b>Total of specialized credits</b>	<b>9</b>			<b>9</b>	<b>0</b>
9	MT07052	GIS and Remote Sensing Applications for Environmental studies	2	1	1	x	
10	MT07053	Environmental Impact Assessment and Ecological Risk Assessment	3	3	0	x	
11	MT06034	Integrated Environmental Management 1	2	2	2	x	
12	MT06035	Integrated Environmental Management 2	2	2	0	x	
		<b>Total of supplementary credits</b>	<b>36</b>			<b>0</b>	<b>18/36</b>
13	MT06021	Development and Environmental Protection	2	2	0		x
14	MT07030	Advanced system approaches in environmental and development studies	3	3	0		x
15	MT07056	Advance in Solid waste treatment	2	2	0		x
16	MT07066	Applied ecology in Advance	3	2	1		x

17	MT07031	Advance applied environmental chemistry	<b>3</b>	3	0		x
18	MT07032	Advance Modeling for Environmental Studies	<b>3</b>	2	1		x
19	MT06037	Advance hazardous waste management	<b>2</b>	2	0		x
20	MT07070	Agricultural probiotics and environmental protection	<b>2</b>	2	0		x
21	MT07071	Environmental Analysis	<b>2</b>	2,0	0		x
22	MT07072	Field trips	<b>2</b>	0	2		x
23	KT07024	Environmental economics	<b>3</b>	3	0		x
24	QL07060	Intergrated watershed management	<b>3</b>	3	0		x
25	NH06018	Advanced biological statistics	<b>2</b>	1,5	0,5		x
26	QL07062	Environmental planning and sustainable development	<b>2</b>	2	0		x
27	NH07066	Agricultural systems	<b>2</b>	1,5	0,5		x
28	<b>MT07999</b>	Master thesis	<b>12</b>	0	12	<b>12</b>	