

**PROGRAMME SPECIFICATION**  
**FOREST RESOURCES MANAGEMENT**  
**2020**

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FOREST RESOURCES MANAGEMENT**

*(Attached to Decision No. 1087/QĐ-DT dated December 9, 2020, of the Rector of University of Agriculture and Forestry - Thai Nguyen University)*

**1.1.1. Description of the training program**

**1.2. Introduction**

The training program of Forest Resources Management (FRM) has adjusted since 2020 to train learners with good political and ethical qualities; respect the policies and laws; have good health. This program educates engineers of forest resources management to provide a higher human resource for the forest sector such as biodiversity conservation, forest fire-prevention, pest and diseases control.

In addition, learners are offered a professional working and attitude, responsibility, enthusiasm, and sociability; capability of teamwork; being aware of cultural and ethic issues in economic and business activities; the ability of communication, informatics, and foreign language skills. The Forest Resources Management training program was supplemented and developed from the adjusted program in 2018 to meet the stakeholder's survey.

**1.3. Information about the training program (FRM)**

<b>Key contents</b>	<b>2020</b>	<b>2018</b>	<b>2016</b>
Training program (Vietnamese)	Quản lý tài nguyên rừng	Quản lý tài nguyên rừng	Quản lý tài nguyên rừng
Training program (English)	Forest Resources Management	Forest Resources Management	Forest Resources Management
Code:	7620211	7620211	7620211
University/campus:	Thai Nguyen University of Agriculture and Forestry	Thai Nguyen University of Agriculture and Forestry	Thai Nguyen University of Agriculture and Forestry
Degree	Engineer of Forest Resources Management	Engineer of Forest Resources Management	Engineer of Forest Resources Management
Level	Undergraduate	Undergraduate	Undergraduate

Requirement credits	154	120	120
Mode of training	Full time	Full- time	Full time
Language	Vietnamese	Vietnamese	Vietnamese
Time	.5 years	4 years	4 years
Enrollment method	National high school graduation examination results of candidates, which are taken from high to low. Admission based on high school transcripts.	National high school graduation examination results of candidates, which are taken from high to low. Admission based on high school transcripts.	Students graduated from high school, meeting the requirements of the university and college enrollment regulations of the Ministry of Education and Training Selection groups: Math geography chemistry; Math, Chemistry, Biology; Math, Literature, Chemistry; Math, Biology, Geography.
Case of enrollment	All provinces	provinces	provinces
Graduation conditions:	Accumulation of sufficient number of courses and volume of credits: 154 The cumulative grade point of the whole course is 2.0 or higher; Having certificate of national defense education and physical education; Achieving foreign language; information technology requirements according to regulations of the Ministry of Education and Training.	Accumulation of sufficient number of courses and volume of credits: 120 The cumulative grade point of the whole course is 2.0 or higher; Having certificate of national defense education and physical education; Achieving foreign language; information technology requirements according to regulations of the Ministry of Education and Training.	Accumulation of sufficient number of courses and volume of credits: 120 The cumulative grade point of the whole course is 2.0 or higher; Having certificate of national defense education and physical education;

Updated time of the description	December, 2020.	May, 2018	-

## 1.4. Objectives

### 1.3.1. General objective

This program provides students with comprehensive professional knowledge, principles, laws of nature-society, basic practical skills. Furthermore, it is able to work independently, creatively to deal with problems in the sector of the forest management.

### 1.3.2. Specific objectives

**The specific objectives of the program are**

- PO1: Having knowledge of natural sciences, society, sports, culture, politics, security and defense;
- PO2: Having general and specialized knowledge in the field of forest resources management, and ability of conducting scientific research and transferring technology;
- PO3: Having professional skills, leadership capacity, working in a multicultural, multimedia, and globalized environment;
- PO4: Having professional ethics, being proactive, creative, capable of starting a business, capable of lifelong self-study and working in mountainous, border areas and islands;

## 1.5. Expected Program learning outcomes (PLOs)

Content	Expected PLOs <i>At the end of the program, learners are able to</i>
<b>General knowledge</b>	PLO1: Apply natural and social science knowledge in the field of forest resources management
	PLO2: Apply knowledge of politics, military, security, defense, sports and culture to self-training.
<b>Professional knowledge</b>	PLO3: Classify forest plants, animals, insects, biodiversity for conservation, exploitation, and development of genetic resources.
	PLO4: Develop a comprehensive professional knowledge of forest management and protection.
	PLO5: Apply professional knowledge of forest regulations and administration of forest rangers.
	PLO6: Formulate projects on sustainable forest management, which are suitable for different ecological regions.
	PLO7: Formulate a digital database for monitoring forest resources and sustainable management of forest resources.
	PLO8: Apply methods of organizing and trading forest products.

<b>Generic skills</b>	PLO12: Apply teamwork, communication skills in forest resource management.
	PLO14: Plan and implement training activities, training, research, and transferring science into practice.
<b>Professional skills</b>	PLO9: Apply the skills of classifying some rare and precious species of flora and fauna for the conservation and development of genetic resources.
	PLO10: Be able to use specialized machinery, equipment, software, and technologies in forest resource management.
	PLO11: Implement the process of investigating and monitoring forest resources and forest fires, forest pests, and forest ranger's administration.
	PLO13: Apply skills of digital technology to analyze databases for forest resource conservation and development.
<b>Autonomy capacity and responsibility</b>	PLO15: Determine his or her role and lifelong learning ability to adapt to the changing work environment in the context of international integration.
	PLO16: Comply with the national law and professional ethics; clear future direction.

### 1.5. The matrix of program objectives (POs) and learning outcomes (PLOs)

POs	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO 10	PLO 11	PLO 12	PLO13	PLO 14	PLO15	PLO16
PO1	x	x							x							
PO2			x	x	x	x	x	x	x	x			x	x		
PO3						x	x	x		x	x	x	x			
PO4											x	x			x	x

### 1.6. Matrix of knowledge and skills development corresponding to competency level and expected learning outcomes

#### 1.6.1. Training program content

No	Module	Total of Credits	Courses (C)	Credits		Module	Total of Credits	Courses (C)	Số TC		Module	Total of Credits	Courses (O)	Số TC	
				Co res	Elec tives				Co res	Elec tives				Co res	Electiv es
1	Level 1 - Remember and understand the knowledge of the policies of the Party and State.					Level 2 - Apply prior specialized knowledge to solve practical problems.					Level 3 -Synthesize and evaluate knowledge on forest resource management to solve practical problems.				
	Module 1. Social theory	9	C1. Marxist-Leninist philosophy	3		Module 12.  Prior specialized knowledge	15	C21. Forest plants	3		Module 13. Apply knowledge of practice to solve problems in natural resource management.	4	C46. Internship 1	1	
			C3. Science socialism	2				C23. Biodiversity	3				C47. Internship 2	3	
			C4. Ho Chi Minh's Ideology	2				C24. Forest Ecology	3						
			C5. History of the Vietnamese Communist Party	2				C27. Hydrometeorology for forestry		3					
										3					

[illegible]

						Management of ecosystems								
Level 1. Know the principles of variety selection and management of forest tree varieties					Level 2. Apply the natural principles in forest in to practices.					Level 3. Apply specialized knowledge to develop sustainable forest resources				
Module 4  Application of silvicultural techniques in forest management and development	3	C7. Biology	3		6	C35. Silvicultural Techniques	3		3	C36. Afforestation	3			
						C39 Forest Seedling		3						
						C39. Forestry and Land Use		3						
Level 1. Understand the principles of multidisciplinary cooperation for sustainable management					Level 2. Apply specialized knowledge in sustainable forest resource management					Level 3. Effective assessment of services from sustainable forest management				
Module 5. Multidisciplinary integrated forest resource management to meet sustainability and economic efficiency		C44. Bee keeping		3		C42. Forest economics		3		C40. Forest Environmental Service			3	
		C44. Marketing		3		C42. Community forestry		3		C40. Environmental		3		



		3					3					3	managemen t & sustainable developmen t		
			C44. Mushroom production techniques		3			C42. Watershed managemen t		3			C40 Environmenta l impact assessment		3
			C44. Breeding		3										
			C44. High- tech agriculture		3										
3	Level 1. Understand the nature of algorithms to research and data analysis					Level 2. Use technology in forest resources management and development					Level 3. The optimal plan in forest resource management can be developed				
	Module 6. Scientific research	3	C15. Xác suất thống kê	3			6	C37. Quản trị rừng	3			6	C51. Practical Training 1	3	
								HP22. Đo đặc lâm nghiệp	3				HP48. Internship 3	3	
4	Level 1. Understand the mathematical principles of planning					Level 2. Analyze resources in planning					Level 3. Combined theory and practice to formulate a sustainable management plan				
	Module 7. Planning	4	C10. Mathematics	2			3	C45. Project management		3	Modul e 14. Make a docu	3	C50. Internship 5: Making a sustainable managemen t plan	3	
			C27. Microeconomic s		3			C45. Enterprise Administration		3					
			C2. Marxist-	2				C45. Value chain		3					



[illegible]

[illegible]

### 1.6.2. Matrix of courses contribute to the PLOs of EFRMP

No.	Course title	Credits	Program Learning Outcomes (PLOs)															
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<b>A</b>	<b>Basic Science Knowledge</b>	<b>45</b>																
<b>I</b>	<b>Required Courses</b>	<b>39</b>																
1	Marxist-Leninist philosophy	3	3	2						2				1		1	2	2
2	Marxist-Leninist political economy	2	2	3						2				1		1	2	2
3	Science socialism	2	2	2						2				1		1	2	2
4	Ho Chi Minh's Ideology	2	2	3						2				1		1	3	3
5	History of the Vietnamese Communist Party	2	2	3						2				1		1	3	3
6	Chemistry	4	2								1		1					

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<b>1.1</b>	<b>Required Courses</b>	<b>15</b>															
35	Forest Plants	3				3					2		2				2
36	Forest Measurement	3							3			3		1	3	2	
37	Biodiversity	3				3					2		2				
38	Forest Ecology	3	1	1		1	2							2			
39	Scientific Research Methodology	3						2	3			2			1		
<b>1.2</b>	<b>Elective Course</b>	<b>9</b>															
40	Wood Science	3			3				2	3						2	
41	Forest Resource Management Policy and Law	3					2						2				3
42	Forest Hydro – Meteorology	3				3					2	2					
43	Conservation Principle	3				3					2		2				2
44	Macroeconomic	3		1				2		3					2		
<b>1.3</b>	<b>Special Knowledge</b>	<b>45</b>															
<b>1.3. 1</b>	<b>Required Courses</b>	<b>27</b>															
45	Application of Geographical Information System (GIS) for forest/ GIS for forest	3						2			3			3		2	
46	Pest control/ Forest Diseases Management	3			3					3		3				2	
47	Forest Zoology	3			3					3		2				2	
48	Forest fire Management	3				3					2				2		1
49	Forest Yield Inventory	3						3			3	3				2	
50	Forest Ranger Profession	3					3					3	1			3	3
51	Silvicultural system	3				3		3					2				
52	Afforestation	3						2		3					3	2	
53	Forrest Administration	3				2		2				2					3
<b>1.3.2</b>	<b>Elective Course</b>	<b>18</b>															
54	Forrest information Management	3						3			3	2		3			
55	Sustainable Forest Management	3				3		3							3		2
56	Forest Environmental Services	3						3		2		2			1		
57	Conservation Conflict Management	3				2	3						3				2
58	Analysis Policy in Forest Resource Management	3					3						2				3

[illegible]

85	Internship Training 1 (Field trip)	1									2			3			3	2
86	Internship Training 2 (Measurement and Forest Resources Inventory)	3							2			3			3		2	
87	Internship Training 3 (Inventory Plant Forest and Biodiversity)	3									3	2	3					2
88	Internship training 4 (Forest Administrative Professionally)	4											3	2		3		3
89	Internship Training 5 (Sustainable Forest Management Planning)	3										3	3			3	2	
<b>IV</b>	<b>Skilled Practice</b>	<b>10</b>																
90	Skilled Practice 1 (Designing and Operate Nursery)	3										3		2		3	2	
91	Skilled Practice 2 (Developing Database Information in Forestry)	4										3	2		3		2	
92	Skilled Practice 3 (Designing Project for Forest Management and Forest Fire Preventing)	3										3	3		2	2		
<b>V</b>	<b>Graduation internship (Thesis)</b>	<b>10</b>	<b>1</b>		<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>
	<b>Total Credits</b>	<b>154</b>																

*Note: (3 = High contribution; 2 = Medium contribution; 1 = Low contribution)*



## **1.7. Methods/strategies for teaching - learning**

### **1.7.1. *Teaching and learning methods/strategies***

The subjects devoted to teaching FRM are all used different teaching methods such as: Student-centered, active integration method (creating a safe space for students), presentations., exercises, discussions, seminars, practice, practice, forging...

Presentation method are used with theoretical knowledge, the purpose is to help students better understand the content, concepts, texts, rules... of the modules.

Learner-centered training methods that encourage their engagement and productivity. When students feel acknowledged and cared for, their intake of information increases and they retain it longer. Students are required to directly involve in achieving knowledge and skills. Lecturers get to act more as facilitators and guides, creating an atmosphere that generates autonomous student learning

Active integration method helps students synthesize knowledge, understand lessons faster, express more opinions... Class time is always very interesting and exciting when students are free to debate.

- + Solving techniques for students

- + Increasing the interest and interest of the teachers themselves as they always learn new things and face many challenges in each lesson.

- + Establishing the right atmosphere to prepare students for real work when teamwork is a "survival skill" for success.

Encouraging students to take responsibility for their own learning.

Seminar, discussion methods are used for seminar knowledge, discussion. The purposes are to help students practise presentation skills and exchange content of the subject.; practise reporting, self-research, interaction, and teamwork skills ;form autonomy and responsibility to enhance students' lifelong learning.

Practice: This is the method used for independent modules or integrated into the subject content. The purpose is to practise experimental skills, practice on computers, maps, and surveying machines.; help students verify the theoretical content of the subject, so that students will improve their professional skills.

Vocational training helps students improve their skills in surveying, granting land use right certificates, making cadastral records, editing current maps, specialized maps of land management, and analyzing land adaptability, land suitability classification...

### **1.7.2. Improve the quality of teaching**

The training program is reviewed every 2 years to adjust as well as meet the requirements of stakeholders for the profession.

In each semester, the subjects develop lesson plans of the lecturers, especially young lecturers exchange and share knowledge and teaching methods in order to improve its teaching capacity.

The modules of the program are regularly asked for feedback from students about the lecturers' qualities, knowledge, teaching methods and responsibility.

## **1.8. Evaluation methods**

### **1.8.1. Evaluation form of the course and grade**

A 10-point scale is used for all assessments in the course. Each course has a typical assessment method based on the knowledge

Evaluation form:

$$\begin{aligned} \text{Course evaluation score} = & \text{Attendance score} * 20\% + \text{Midterm score} * 30\% \\ & + \text{Final exam score} * 50\% \end{aligned}$$

Where:

**Attendance score:** Students are required to fully participate in the class, contributing comments also added content to evaluate the results of students' group discussions. **Mid-term test score:** The mid-term score is marked by lectures. It is usually taken at the mid-time of semesters. Evaluation according to 2 points: (i) the written exam (weighted 0.7) and (ii) scores of practice tests (weight 0.3).

**Final exam score:** a final exam is taken out at the end of semesters. They are some kind of exams. They are Oral exam/Written exam/Essay exam/Online. Each of them has a typical set of questions meeting the subject learning outcomes. Each subject of the final exam is scored by two lectures.

### **1.8.2. Evaluation criteria, rating scale and rubric**

Example of the PLOs Matrix of the Forest Zoology

<b>CLOs</b>	<b>Attendance (20%)</b>	<b>Mid-term (30%)</b>	<b>Final exam (50 %)</b>
CLO1	X	X	X
CLO2	X	X	X
CLO3	X		X
CLO4	X		X

CLO5	X	X	X
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### Rubric 1: Attendance

Criteria	Weight (%)	Very good (8,5 – 10)	Good (7,0 – 8,4)	Average (5,5 – 6,9)	Below average (4,0 – 5,4)	Weak < 4,0
Fully attend theory, practices, and discussion lessons	40%	Fully attended theory, practices, and discussion lessons	Attended 90% - 99% of theory, practice and discussion lessons	Attended 86% - 89% of theory, practice and discussion lessons	Attended 80% - 85% of theory, practice and discussion lessons	Attended <80% of theory, practice and discussion lessons
Attitude in theory, practices, and discussion lessons	40%	Actively speaking to build the lesson, proficiently perform skills related to the practice. Volunteering to answer questions and respond well to volunteering questions.	Relatively active in giving constructive speech, proficiently performing skills related to practical exercises, and having the spirit of volunteering to answer questions, but the low quality of answers	Rarely to build the lesson, manipulate the skills related to the practice, and volunteer to answer questions. Only the designated teacher responds. And usually do not give a good answer	Do not give constructive speech, not fully manipulate the skills related to the exercise, and volunteer to answer questions. Only the designated teacher responds. And usually do not give a good answer	Only attended the class but do not participate in the speech, volunteered to answer questions. Unable to manipulate skills related to practice exercises. Do not understand the lesson and could not answer the questions related to the old lesson. Work separately during class time. Go to school late.
Self-study	20%	Well-prepared of	Prepare 80-95% of	Prepare 60-79% of	Prepare 50-59% of	Prepare <50% of

		assignments before going to class	assignments before going to class	assignments before going to class	assignments before going to class	assignments before going to class
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## Rubric 2: Mid-term exam

### Method 1: Writing examination

Criteria	Weight (%)	Very good (8,5 – 10)	Good (7,0 – 8,4)	Average (5,5 – 6,9)	Below average (4,0 – 5,4)	Weak < 4,0
Writing examination	100	Correct 85 – 100% of the answers	Correct 70 – 84 % of the answers	Correct 55 – 69 % of the answers	Correct 40 – 54 % of the answers	Correct <40 % of the answers

### Method 2: Group discussion assignment

Standard	Weight (%)	Very good (8,5 – 10)	Good (7,0 – 8,4)	Average (5,5 – 6,9)	Below average (4,0 – 5,4)	Weak < 4,0
Assignment 1	50	- Complete and correct presentation of the required content on the topic, with additional relevant content contributing to the expansion of the subject's knowledge, the presentation of the report is attractive, clear, easy to understand, and highlights the importance of the topic. The main	- Complete and correct presentation of the required content on the topic. The presentation of the report is clear and easy to understand, stating the focus of the content. - Answer >70% -	- Full presentation of the required content on the topic, some content is not correct. - Reading report, difficult to follow, does not state the focus of the content - Answer >50% -	- The presentation lacks some required content on the topic. - Presenting the report is not fluent, does not state the focus, does not generate interest from the	- The content is not presented properly according to the requirements of the topic, or the content is too sketchy, not providing the necessary information. - The

		<p>content, being creative in the method of presentation.</p> <ul style="list-style-type: none"> <li>- Get comments/questions of interest, Questions are answered fully, clearly, and satisfactorily, Show cooperation among team members clearly.</li> <li>- There is a division of answers and reports among team members</li> </ul>	<p>80% of the questions and have a reasonable answer for the unanswered parts</p> <ul style="list-style-type: none"> <li>- Show collaboration between team members clearly.</li> <li>- The division of answers and reports among group members is not reasonable.</li> </ul>	<p>70% of questions</p> <ul style="list-style-type: none"> <li>- There is cooperation among team members but it is not obvious</li> </ul>	<p>audience.</p> <ul style="list-style-type: none"> <li>- Answer 30%-50% of questions.</li> <li>- There is no combination of members, maybe only 1 or a few members prepare and report</li> </ul>	<p>presentation is too sketchy; the audience cannot understand the content.</p> <ul style="list-style-type: none"> <li>- Can't answer any questions.</li> <li>- The article is taken from another source, not directly composed</li> </ul>
Assignment 2	50	Evaluate the same scale as assignment 1				

### Rubric 3: Practice

Criteria	Weight (%)	Very good (8,5 – 10)	Good (7,0 – 8,4)	Average (5,5 – 6,9)	Below average (4,0 – 5,4)	Weak < 4,0
Practice 1	20	<ul style="list-style-type: none"> <li>- Report: Present fully and exactly as required on practice contents. There are suggestions, recommendations, lessons learned.</li> <li>- Practice: proficiently implement the content in the lesson, have creative thinking, and have a high responsibility in learning</li> </ul>	<ul style="list-style-type: none"> <li>- Report: Present fully and exactly as required on practice contents. There are more suggestions, recommendations</li> <li>- Practice: proficiently implement the content in the lesson, be responsible for learning</li> </ul>	<ul style="list-style-type: none"> <li>- Report: Present fully and exactly as required on practice contents.</li> <li>- Practice: implement the content in the lesson, be responsible for learning</li> </ul>	<ul style="list-style-type: none"> <li>- Report: The presentation lacks some required content about the practice sessions.</li> <li>- Practice: know how to implement some practical content in the lesson, not be actively creative in learning</li> </ul>	<ul style="list-style-type: none"> <li>- Report: The content is not presented correctly as required by the practice sessions or the content is too sketchy and does not provide the necessary information.</li> <li>- Unable to carry out the practical contents, no sense of practice.</li> </ul>
Practice 2	20	Evaluate with the same scale with practice 1				
Practice 3	30	Evaluate with the same scale with practice 1				
Practice 4	30	Evaluate with the same scale with practice 1				

### Rubric 4: Final exam

#### Method 1: Computer-based multiple-choice examination

Criteria	Weight (%)	Very good (8,5 – 10)	Good (7,0 – 8,4)	Average (5,5 – 6,9)	Below average (4,0 – 5,4)	Weak < 4,0
Correctly answer the	50 questions	43-50 questions	35-42 questions	28-34 questions	20-27 questions	< 20 questions

multiple-choice questions						
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## Method 2: Assignment

Criteria	Weight (%)	Very good (8,5 – 10)	Good (7,0 – 8,4)	Average (5,5 – 6,9)	Below average (4,0 – 5,4)	Weak < 4,0
Assignment	100	<ul style="list-style-type: none"> <li>- Presenting fully and correctly the required content on the topic, with additional relevant contents contributing to the expansion of knowledge of the topic, the presentation of the report is attractive, clear, easy to understand, and the focus of the content, being creative in the presentation method.</li> <li>- Get comments/questions of interest, Questions are answered fully, clearly, and satisfactorily.</li> <li>- Do not duplicate other documents when using plagiarism software</li> </ul>	<ul style="list-style-type: none"> <li>- Present fully and correctly the required content on the topic. The presentation of the report is clear and easy to understand, stating the focus of the content.</li> <li>- Answer &gt;70% - 80% of the questions and have a reasonable answer for the unanswered parts</li> <li>- Duplicity with other documents &lt;20%</li> </ul>	<ul style="list-style-type: none"> <li>- Full presentation of the required content on the topic, some content is not correct.</li> <li>- Reading report, difficult to follow, does not state the focus of the content</li> <li>- Answer &gt;50% - 70% of questions</li> <li>- Duplicity with other documents 21% - 30%</li> </ul>	<ul style="list-style-type: none"> <li>- The presentation lacks some required content on the topic.</li> <li>- Presenting the report is not fluent, does not state the focus, does not generate interest from the audience.</li> <li>- Answer 30%-50% of questions.</li> <li>- Duplicity with other documents 31% - 50%</li> </ul>	<ul style="list-style-type: none"> <li>- The content is not presented correctly according to the requirements of the topic, or the content is too sketchy, does not provide the necessary information.</li> <li>- The presentation is too sketchy; the audience cannot understand the content.</li> <li>- Can't answer any questions.</li> <li>- Duplicity with other documents &gt;50%</li> </ul>

## 2. Program Description

### 2.1. Program framework

Total required credits: 154 credits (Excluding the knowledge block of Physical Education and National Defense Education)

No	Content	Number of credits
<b><i>I</i></b>	<b><i>BASIC SCIENCE KNOWLEDGE</i></b>	<b><i>45</i></b>
	Compulsory courses	39
	Elective Courses	6
	Physical education (excluding cumulative credits)	-
	National defense education (excluding cumulative credits)	-
<b><i>II</i></b>	<b><i>SPECIALIZED KNOWLEDGE</i></b>	<b><i>109</i></b>
	Pre-major courses	24
	Specialized Knowledge	45
	Supplementary knowledge	6
	Internship	14
	Professional Practices	10
	Bachelor Thesis	10
<b><i>III</i></b>	<b><i>TOTAL</i></b>	<b><i>154</i></b>



## 2.2. Program

T T	Vietnamese	English name	Credit	Theory	Practice	Code
<b>A. Kiến thức giáo dục đại cương</b>		<b>Basic Science Knowledge</b>	<b>45</b>			
<b>I. Các học phần bắt buộc</b>		<b>Compulsory courses</b>	<b>39</b>			
<b>a) Lý luận chính trị</b>		<b>Political Theory</b>	<b>11</b>			
1	Triết học Mác - Lênin	Marxist-Leninist philosophy	3	45	-	MLP131
2	Kinh tế chính trị	Marxist-Leninist political economy	2	30	-	MLE122
3	Chủ nghĩa xã hội khoa học	Science socialism	2	30	-	SCS123
4	Tư tưởng Hồ Chí Minh	Ho Chi Minh's Ideology	2	30	-	HCM124
5	Lịch sử Đảng Cộng sản Việt Nam	History of the Vietnamese Communist Party	2	30	-	HCP125
<b>b) Ngoại ngữ, Tin học, Khoa học tự nhiên, xã hội</b>		<b>Foreign Language, IT, Natural and Social Sciences</b>	<b>28</b>			
6	Hóa học	Chemistry	4	50	20	CHE141
7	Sinh học	Biology	3	40	10	GBI131
8	Xã hội học đại cương	General Sociology	2	30	0	GSO121
9	Vật lý	Physics	2	30	0	PHY121
10	Toán cao cấp	Mathematics	2	30	0	MAT121
11	Tiếng Anh 1	English 1	3	45	0	ENG131
12	Tiếng Anh 2	English 2	3	45	0	ENG132
13	Tiếng Anh 3	English 3	3	45	0	ENG133
14	Tin học đại cương	General Informatics	3	15	60	GIN131
15	Xác suất - Thống kê	Probability and Statistics	3	45	0	PST131
<b>II. Các học phần tự chọn (tích lũy đủ 6 TC)</b>		<b>Elective Courses</b>	<b>6</b>			
16 - 17	Khoa học quản lý	Management Science	2	45	0	MSC131
	Vi sinh vật đại cương	General Microbiology	2	39	12	GMI131
	Văn hóa Việt Nam	Vietnamese Culture	3	35	20	VCU131
	Sinh thái môi trường	Environmental Ecology	3	45	0	EEC131
	Địa lý kinh tế Việt Nam	Vietnam Economic	3	45	0	VEG131

T T	Vietnamese	English name	Credit	Theory	Practice	Code
		Geography				
	Nhà nước và pháp luật	State and Law	3	45	0	SLA131
	Ô nhiễm Môi trường	Environmental Pollution	3	45	0	EPO131
	Sinh học phân tử	Molecular Biology	3	45	0	MBI131
	Phương pháp tiếp cận khoa học	Scientific Approach Methodology	3	45	0	SAM131
	An toàn lao động	Works Safety	3	45	0	WSA131
	Kỹ năng mềm	Soft Skills	3	30	30	SSK131
	Tiếng Anh học thuật	Academic English	3	45	0	AEN134
<b>III. Giáo dục thể chất*</b>		<b>Physical Education</b>	<b>3</b>			
18 - 20	Tay không, điền kinh	Athletics	1	0	30	PED111 +
	Bóng chuyền	Volleyball	1			PED112 +
	Cầu lông	Badminton	1			PED113
	Đá cầu	Shuttlecock Kicking	1			
	Võ	Martial Art	1			
	Bóng rổ	Basketball	1			
	Bóng đá	Football	1			
<b>IV. Giáo dục quốc phòng*</b>		<b>National Defense Education</b>	<b>165 tiết</b>			
<b>B</b>	<b>Kiến thức giáo dục chuyên nghiệp</b>	<b>Professional Knowledge</b>	<b>109</b>			
<b>I</b>	<b>Kiến thức cơ sở ngành</b>	<b>Basic Knowledge</b>	<b>24</b>			
a)	<i>Các học phần bắt buộc</i>	<i>Compulsory courses</i>	<i>15</i>			
21	Thực vật rừng	Forest plants	3	30	15	FPL231
22	Đo đạc lâm nghiệp	Forest Measurement	3	30	15	FME231
23	Đa dạng sinh học	Biodiversity	3	39	6	BDI331
24	Sinh thái rừng	Forest Ecology	3	39	6	FEC231
25	Phương pháp nghiên cứu khoa học	Experimental Method	3	30	15	EME231
b)	<i>Các học phần tự chọn (Chọn 9 TC)</i>	<i>Electives</i>	<i>9</i>			
26 - 28	Khoa học gỗ	Wood Science	3	39	6	WSC231
	Luật và chính sách QLTNR	Law and policy for forestry management	3	39	6	LPF231
	Khí tượng thủy văn rừng	Hydrometeorology for forestry	3	36	9	HFF231
	Nguyên lý bảo tồn	Principle of	3	45		PPR231

T T	Vietnamese	English name	Credit	Theory	Practice	Code
		Preservation				
	Kinh tế vi mô	Microeconomics	3	45		MIC231
<b>II</b>	<b>Kiến thức ngành</b>	<b>Special Knowledge</b>	<b>45</b>			
a)	Các học phần bắt buộc	Compulsory courses	27			
29	Ứng dụng GIS trong Lâm nghiệp	Applied GIS in Forest	3	15	30	AGF331
30	Quản lý sâu bệnh hại	Forest Pathology	3	36	9	FOP331
31	Động vật rừng	Forest Zoology	3	36	9	FOZ331
32	Quản lý lửa rừng	Fire in forest management	3	36	9	FFM331
33	Điều tra sản lượng rừng	Forest Inventory & Quantity	3	30	15	FIQ331
34	Nghiệp vụ kiểm lâm	Profession of rangers	3	36	9	PRA331
35	Kỹ thuật lâm sinh	Sylvicultural Techniques	3	30	15	STE331
36	Trồng rừng	Afforestation	3	36	9	AFF331
37	Quản trị rừng	forest governance	3	36	9	FGO331
b)	Các học phần tự chọn (Chọn 18 TC)	electives	18			
38 - 43	Quản lý thông tin lâm nghiệp	Management of forestry information	3	30	15	MFI331
	Quản lý rừng bền vững	Sustainable forest management	3	36	9	SFM331
	Dịch vụ môi trường rừng	Forest Environmental Service	3	36	9	FES331
	Quản lý xung đột trong bảo tồn	Conflict management in conservation	3	36	9	CMC331
	Phân tích chính sách trong QLTNTN	Analysis and Assessment Policy in Natural Resource Management	3	36	9	AAP331
	Hệ thống nông lâm kết hợp	Agro-Forestry system	3	36	9	AFS331
	Đánh giá và giám sát đa dạng sinh học	Biodiversity monitoring and evaluation	3	36	9	BME331
	Lâm sản ngoài gỗ	Non-timber Forest Products	3	36	9	NFP331
	Quản lý các hệ sinh thái	Management of ecosystems	3	36	9	MOE331
	Biến đổi khí hậu	Climate Change	3	45		CLC331

<b>T T</b>	<b>Vietnamese</b>	<b>English name</b>	<b>Credit</b>	<b>Theory</b>	<b>Practice</b>	<b>Code</b>
	Đất và sử dụng đất LN	Forestry and Land Use	3	36	9	FLU331
	Chọn giống cây rừng	Forest Seedling	3	36	9	FOS331
	Quản lý lưu vực	Basin management	3	36	9	BAM331
	Kinh tế rừng	Forest economics	3	36	9	FOE331
	Lâm nghiệp cộng đồng	Community forestry	3	45		COF331
	Truyền thông trong quản lý tài nguyên	Communication in resource management	3	36	9	CRI331
	Đánh giá tác động môi trường	Environmental impact assessment	3	36	9	EIA331
	Quản lý môi trường & PT bền vững	Environmental management & sustainable development	3	36	9	EMS331
<b>III</b>	<b>Kiến thức bổ trợ</b>	<b>Supplementary knowledge</b>	<b>6</b>			
44 - 45	Chăn nuôi	Breeding	3	36	9	SAH431
	Nông nghiệp công nghệ cao	High-tech agriculture	3	15	30	HTA431
	Quản lý dự án	Project management	3	36	9	PRM431
	Khởi nghiệp và kinh doanh	Start-up and business	3	30	15	SAB431
	Sản phẩm hàng hóa và thương hiệu	Commodity products and brands	3	36	9	CPB431
	Giới thiệu kinh tế sinh học	Introduction Bio-Economics	3	45	0	IBE431
	Phân tích chuỗi giá trị	Value chain analysis	3	36	9	VCA431
	Marketing	Marketing	3	36	9	MAR431
	Kinh tế trang trại	Farm economics	3	36	9	FAE431
	Kỹ thuật sản xuất nấm	Mushroom production techniques	3	36	9	MPT431
	Quản trị doanh nghiệp	Enterprise Administration	3	36	9	EAD431
	Nuôi ong	Beekeepers	3	36	9	BEE431
<b>IV</b>	<b>Thực tập nghề nghiệp</b>	<b>Professional practice</b>	<b>14</b>			
46	TTNN1: Tham quan, học tập tại VQG/khu bảo tồn	Internship training 1: Study conservation activities in the NP/protected area	1		15	INT511

<b>T T</b>	<b>Vietnamese</b>	<b>English name</b>	<b>Credit</b>	<b>Theory</b>	<b>Practice</b>	<b>Code</b>
47	TTNN2: Đo đạc và điều tra tài nguyên rừng	Internship training 2: Measurement & forest inventory	3		45	INT531
48	TTNN3: Điều tra thực vật rừng và đa dạng SH	Internship training 3: plants inventory & Biodiversity	3		45	INT532
49	TTNN4: Nghiệp vụ hành chính kiểm lâm	Internship training 4: Profession of rangers	4		60	INT541
50	TTNN5: Lập kế hoạch QLR bền vững	Internship training 5: Construction of plan for sustainable forestry management	3		45	INT533
<b>V</b>	<b>Rèn nghề</b>	<b>Skilled Practice</b>	<b>10</b>		<b>150</b>	
51	RN1: Đo đạc và thiết lập bản đồ số LN	Skilled Practice 1: Construction and operation of forestry nursery	3		45	SKP631
52	RN2: Xây dựng cơ sở dữ liệu thông tin LN	Skilled Practice 2: Developing the database of forest information	4		60	SKP641
53	RN3. Xây dựng phương án QLVR và PCCR	Skilled Practice 3: Construction of plan for fire protection	3		45	SKP632
<b>VI</b>	<b>Thực tập tốt nghiệp (chọn các hướng sau)</b>	<b>Elective Courses</b>	<b>10</b>			ELC710
<b>54</b>	<b>Đồ án 1. Sản xuất kinh doanh lâm nghiệp</b>	<b>Project 1. Forestry production and business</b>	<b>10</b>		<b>150</b>	
	- Xây dựng phương án phục hồi rừng	- Develop forest restoration plan	10		150	
	- Thiết kế khai thác	- Design exploitation for forestry	10		150	
	- Quản lý trang trại nông lâm nghiệp	- Agro-forestry farm management	10		150	
	<b>Đồ án 2. Xây dựng phương án QLRBV</b>	<b>Project 2. Construction of plan for sustainable forestry management</b>	<b>10</b>		<b>150</b>	
	- Xây dựng hồ sơ cấp chứng chỉ rừng	- Develop documents for forest certification	10		150	
	- Xây dựng hồ sơ giao đất, giao rừng	- Development of land and forest	10		150	

T T	Vietnamese	English name	Credit	Theory	Practice	Code
		allocation documents				
	- Cứu hộ động vật hoang dã	<b>Wildlife rescue</b>	10		150	
	- Lập phương án QL rừng bền vững	- Establish a sustainable forest management plan	10		150	
	<b>Đồ án 3. Ứng dụng công nghệ trong LN</b>	<b>Project 3. Technology application in forestry</b>	<b>10</b>		150	
	- Bảo quản lâm sản	- Preservation of forest products	10		150	
	- Phòng trừ sâu bệnh hại rừng	- Preventing pests and diseases on forests	10		150	
	- Phòng chống cháy rừng	- Forest fire prevention	10		150	
	- Chế biến lâm sản	- Forest products processing	10		150	
	- Chế biến LSNG	- Processing NTFPs	10		150	
	- Rà soát và xác định ranh giới 3 loại rừng	- Review and define boundaries of 3 forest types	10		150	
	- Xây dựng cơ sở dữ liệu ĐDSH	- Developing the database of forest information	10		150	
	<b>Đồ án 4: Lập và quản lý dự án về LN</b>	<b>Project 4: Establishment and management of forestry projects</b>	<b>10</b>		150	
	- Xây dựng dự án LN	- Construction of forestry projects	10		150	
	- Xây dựng hồ sơ đánh giá tác động môi trường trong LN	- Design documents on environmental impact assessment in forestry	10		150	
	<b>Tổng cộng</b>	<b>Total</b>	<b>154</b>			

### 3. Training schedule

#### 3.1. The first year

##### \* Semester 1

No	Course title	Credits	Theory	Practice
1	Chemistry	4	50	10
2	English 1	3	45	

3	General Sociology	2	30	
4	Mathematics	2	30	
5	Physics	2	30	0
6	Physical Education 1	1	0	15
	<b>Total</b>	<b>14</b>		

**\* Semester 2**

No	Course title	Credits	Theory	Practice
1	General Informatics	3	15	30
2	Marxist-Leninist philosophy	3	45	-
3	Biology	3	40	10
4	English 2	3	45	0
5	Probability and Statistics	3	45	0
6	electives 1	2	39	6
7	Physical Education 2	1		15
8	Forest Ecology	3	45	
9	Internship training 1:	1		15
	<b>Total</b>	<b>22</b>		

**3.2. Second year**

**\* Semester 3**

No	Course title	Credits	Theory	Practice
1	Elective 2	2	45	-
2	Marxist-Leninist political economy	2	30	-
3	English 3	3	45	0
4	Forest plants	3	30	15
5	Forest Measurement	3	30	15
6	Physical Education 3	1		15
7	Biodiversity	3	39	12
8	Practical training 1:	3		45
	<b>total</b>	<b>20</b>		

**\* Semester 4**

No	Course title	Credits	Theory	Practice
1	Science socialism	2	30	-
2	Forest Zoology	3	39	6
3	Silvicultural Techniques	3	30	15
4	Applied GIS in Forest	3	15	30
5	Experimental Method	3	30	15
6	Afforestation	3	36	9
7	Military course (165 lessons)			
	<b>Total</b>	<b>17</b>		

### 3.3. 3<sup>rd</sup> years

#### \* Semester 5

No	Course title	Credits	Theory	Practice
1	Ho Chi Minh's Ideology	2	30	-
2	Forest Pathology	3	36	9
3	Forest Inventory & Quantity	3	30	15
4	Sustainable forest management	3	30	15
5	Forest economics	3	36	9
6	Agro-Forestry system	3	36	9
7	Project management	3	36	9
8	Internship training 2: Measurement & forest inventory	3		15
	<b>Total</b>	<b>23</b>		

#### \* Semester 6

No	Course title	Credits	Theory	Practice
1	History of the Vietnamese Communist Party	2	30	
2	Forest Environmental Service	3	36	9
3	Enterprise Administration	3	36	9
4	Forestry and Land Use	3	36	9
5	Profession of rangers	3	36	9
6	Internship training 3: plants inventory & Biodiversity	3		90
7	Forest governance	3	36	9
8	Practical training 2: Developing the database of forest information	4		120
	<b>Cộng</b>	<b>24</b>		

### 4.4. 4<sup>th</sup> year

#### \* Semester 7

No	Course title	Credits	Theory	Practice
1	Communication in resource management	3	36	9
2	Wood Science	3	39	6
3	Law and policy for forestry management	3	39	6
4	Principle of Preservation	3	45	
5	Fire in forest management	3	36	9
6	Internship training 5: Construction of plan for sustainable forestry management	3		90
7	Practical training 3: Construction of plan fire protection	3		90
	<b>Cộng</b>	<b>21</b>		



**\* Semester 8**

No	Course title	Credits	Theory	Practice
1	Internship training 4: Profession of rangers	4		120
2	Graduation thesis	10		150
	<b>Total</b>	<b>14</b>		

**4. Instructions for program implementation**

a. The training program is implemented according to the formal university training regulations under the current credit system of the Ministry of Education and Training and the University of Agriculture and Forestry.

The prescribed hours are as follows:

1 credit = 15 lessons of theoretical teaching or class discussion

= 30 hours of experiment or practice

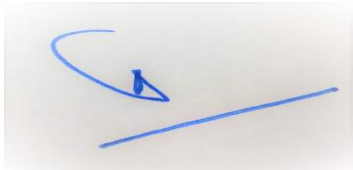
= 45 hours of self-study

= 45 □ 90 hours of practice at the facility.

= 45 □ 60 hours of project implementation, graduation thesis.

The number of course hours is a multiple of 15.

b. Foreign language outcomes: According to the regulations of the University of Agriculture and Forestry. During the study period, the University may control the student's foreign language development through each academic year to determine the number of credits in semester that students are allowed to register. Students can study by themselves or enroll in the school's program of developing foreign language ability.

<b>Rector</b>  <b>Tran Van Dien</b>	<b>Dean</b>    <b>Duong Van Thao</b>
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