CURRICULUM DESCRIPTION OF ENGINEER TRAINING IN FOREST RESOURSE MANAGEMENT

2018

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(Followed/To be enclosed/ by the Decision No. 984/QD - DT dated July 23rd, 2018 issued by Rector of Thai Nguyen University of Agriculture and Forestry)

1. Curriculum description

1.1. Curriculum introduction

The curriculum description of engineer training in forest resource management has been adjusted every two years since 2018 2018 with the aim to train engineer of forest resource management to have good political and moral qualities, have a sense of respect and fully comply with the policies and laws of the state, and have good health to satisfy job requirements.

Training engineers for forest resources management in the field of forest management and protection to be capable of managing and organizing sustainable develoment of the environmental resources and various functions of the forest. The aim of this major is to train forestry engineers specialized in the field of forest resource management, who are able to manage and organize the sustainable development of the environmental resources and various functions of the forest. In addition, training engineers to master professional skills, ability to work effective independent in production facilities, research center and agencies related to forest resource management and development. Having a professional, responsible,

enthusiastic and sociable working style and attitude; capable of teamwork, be aware of cultural and ethnic issues in economic and business activities. Having communication, informatics, and foreign language skills to meets job requirements, especially foreign language skills in forest resource management.

The forest resource management program was supplemented and developed from the adjusted program in 2016 to respond social demand.

1.2. General information of the training program

Program name (Vietnamese)	Quản lý tài nguyên rừng
Program name (English)	Forest Resource Management
Training code	7620211
Name of the University	University of Agriculture and Forestry - Thai Nguyen University
Name of Diploma	Engineer in Forest Resouse Management
Education level	University
Number of credits required	120
Training forms	Formal
Language :	Vietnamese
Training time	5 years
Candidates	- The target audience for direct recruitment are high school

	students who have won national and international prizes. - The candidate's national high school graduation examination results take the score from high to low or be admitted in the form of transcripts.
Case of enrollment	Every province
Assessment scale	Rated score 10
Graduation conditions	- Accumulation of sufficient number of modules and volume of training programs: 120; - Overal score of course is at least 2.0; Certificate of defense education and physical education; - Achieve output standards in foreign languages; Information Technology.
Job position	Government agency: Agencies under the Ministry of Agriculture and Rural Development, management board of special-use forests, protection forests, Forest Protection Department, Department of Forestry, Sub-Department of Forestry, Sub-Department of Forestry, National Center for Agriculture and Forestry Extension, Department Agriculture and Rural Development, Division of Agriculture, Agricultural Extension Centers at

	provincial, district and commune levels, agro-forestry extension departments, forest rangers, and forestry farms Timber export and import enterprises, state and foreign forest protection and development centers. Institutes of Agro-Forestry Research: Institute of Forest Research, Institute of Northern Mountainous Agro-Forestry Science and Technology, Institute of ecology and biological resources, Research institute of forest ecology and environment…. Educational and training institutions: Universities, Colleges, High schools, Vocational training in forest resource management Social organizations and non-governmental organization. Other facilities are related to forest resource management biodiversity conservation. Ecotourism businesses, wildlife centers of the state and foreign.
Postgraduate study	Graduates can study in Master program and Doctoral program at home and abroad
Upgraded time of curriculum description	May 2018

1.3 The training objectives of the program

1.3.1 General objective

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

1.3.2. Specific objectives

- PO1: Having knowledge of natural sciences, society, sports, culture, politics, national 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; being capable of lifelong self-study and working in mountainous, border areas and islands;

1.4. Expected learning outcome (ELOs)

Knowledge:

1. Applying in-depth knowledges in forest management, forest fires, forest entomology and pathology.

2. Applying well knowledges of forest measurement, information technology to investigate; evaluate, monitor, and monitor changes in forest resources and forest resources management.

3. Applying knowledges of forest plants, forest zoology, biodiversity in the fields of conservation, exploitation, and development of genetic resources.

4. Understanding and applying knowledge of the law in controlling, and handling violations in forestry and certifying the origin of forest products.

5. Understanding and applying business knowledge, legal knowledge, policy, forest governance, exploiting and trading in forest ecosystem services.

6. Applying practical knowledge through specialization skills practice, professional practice and thesis

Skills :

7. Planning and implementing manufacturing business, professional advice in forest products business, scientific research in forestry.

8. Consulting, transferring technical and technological advances in forestry, training and fostering technical staff and workers in the field of forestry, directing the implementation of technical measures to build and develop forest resources.

9. Designing silviculture, afforestation, forest management and protection

10. Applying and performing document, regulations, forest laws in management, development, conservation and exploitation of forest resources

11. Performing proficiently in computer software (according to IT standards) and specialized IT to serve in the calculation, forestry statistics and and forestry models.

12. Working independently, listening, observing, team-working, analysing, creative thingking, presenting and having foreign language ability at A2 level or equivalent.

Attitude:

13. Performing, following party policies and government laws, obey the rules of agencies and organizations

14. Have a sense of responsibility, eagering to learn , having a spirit of cooperation, having an open attitude, having the will to overcome all dificulties.

15. Having professional ethics, honesty and efficiency, passion, enthusiastic and creativity at work

1.4 Objective matrix and expected learning outcomes of the training program

POs	ELO1	ELO2	ELO3	ElO4	ElO5	ElO6	ElO7	ElO8	ElO9	ElO10	ElO11	ElO12	ElO13	ElO14	ElO15
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

1.5 The matrix link between subjects with program expected learning outcomes

List	Courses title	Credits	ELOs														
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1-31	**FOUNDATION KNOWLEDGE**	**42**															
	BASIC KNOWLEDGE	**18**															
	Required Subjects	**12**															
32	Forest Plants	3	b	c	c	a	c		c	b				c			
33	Forest Measurement	3		a	c		c	c	a	a	b		b	c			
34	Biodiversity	3	b		c	a	c			c							
35	Forest Ecology	3	b	b		a	c	b		c	b						
	Elective Course	**6**															
36	Wood Science	3	a		a	b	c		c	b	b	c					
37	Conservation Principle	3	c			c		b		c	b			c			
38	Microeconomic	3			b	c		c									c
39	Laws and policies in forest resource management	3	a		c	b				c	b						
	SPECIALIZED KNOWLEDGE	**33**															
	Required subjects	**18**															

List	Courses title	Credits	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
											ELOs						
40	Applied GIS in Forestry	3		a	b	c	c	a	b	a	a		a	c			
41	Forest Entomology and pathology	3	b	c	c	c	c	c	b	b	c	c					
42	Forest Range Administration	3		a	c		c	c	a	a	b		b	c			
43	Forest Inventory and yield modelling	3	c	b	b	a	c	b	b	a	a			c			
44	Silvicultural	3	a	b	b	b	c	b	b	a	b						
45	Forest fire Management	3		b	b	c	b				a		a	b	b	b	b
	Elective Course	**15**															
46	Forest Zoology	3				a	b							b	b	b	b
47	Land and Land Use in Forest	3	c	a	b	c		c	c	b	b		c	c			
48	Afforestation	3	a	c	c	b	c	c	b	a	b			c			
49	Forest Economic	3		b	a			c	b					b			
50	Non-timber forest products	3		c	c		c	c	c	b		c		c			
51	Biodiversity Assessment and Monitoring	3	a	b	c			c	c	b	b		c	c			
52	Sustainable Forest Management	3		c	a			b	c			a			a		
53	Community Forestry	3	c	b	b			c	c	c	c		b				
54	Agro-forestry System	3	c		b	c	c	c	b	b	a			c			
55	Communication in natural resources management	3	c	b	b			c	c	c	c		b				
56	Environmental Impact Assessment	3		b	a			c									
57	Environment Management and Sustainable Development	3	c	a	b	c		c	c	b	b		c	c			
58	Forrest Administration	3		c	a			b		c	a	c		b		c	c
59	Ecotourism	3			b		c	b	c		b						
60	Climate Change	3	b	c			c	b			b						
	SUPPLEMENTARY KNOWLEDGE	**12**															
	Supplementary Course	**6**															
61	Forest Environmental Services	3	c	c	b	c		a	b		b	c		c			
62	Ecosystems management	3	c	a	c	b		c		c	a	b		b			
	Selective subjects	**6**															
63	Startup and Entrepreneurship	3	b		a			c	a	c				a		a	a

List	Courses title	Credits	ELOs														
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
64	Project Management	3		c	a			c	c					b			
65	Marketing	3	c		b	c		c	c					c			
66	Building and development Products Branding	3	c		c	c		a	c		b			c			
67	Tour Guiding/Escort Services	3			b	c		c		c	c			c			
68	Enterprise Administration	3		b	b			c		c	c			c			
69	Value chain analysis	3			a	c			b					a			
	PROFESSSIONAL PRACTICE	**5**															
70	Internship 1. Learn conservation activities at the National Park / Nature Reserve	1	a	b	c	c	c	b		c		c		b	c	b	b
71	Internship 2. Planning sustainable forest management	2	a	b	c	c	c	b		c		c		b	c	b	b
72	Internship 3. Administrative service of forest rangers	2	c	a	b	c	c	b	b	b	a	c	b	a		b	b
73	**THESIS**	**10**	a	a	a	a	a	a	b	a	a	a	a	a	a	a	a
	TOTAL																
	SKILLS PRACTICE IN FIELD	**5**															
74	Skills practice 1: Measurement and construction of digital map	3	c	a	a	c	a	a	b	b	a	c	a	a	c	b	b
75	Skills practice 1: Applied QGIS	3	a	a	c	c	a	c	b	b	a	c		a	c	c	b
76	Skills practice 2: Construction of plan for sustainable foestry management & fire protection	2	a	b	c		a	c	c	c	c	c		a	c	c	b
77	Skills practice 2: Afforestation design	2	a		c	b	a	c	b	b	a	c		a	c	c	b
78	Skills practice 2: Applied biotechnology in forest breedings	2	b	c		a	c	c	c	c	c		a	c	c	b	b
	Total Credits	**120**															

Response level:
a: high response level
b: average level
c: Low response level

List	Courses title	Credits	ELOs														
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

-: not responding

1.7. Methods of teaching and learning

1.7. 1. Teaching methods

Each subjects in training program are taught by difference teaching methods such as: Presentaion, seminar, case study, discussion, teamwork, practice…. Each method is used in diffirent theorical knowledge:

- Presentation method : is used in theorical knowledge section

- Giving excercise method is used in exercise knowledge section. The method object is applying the theory to slove and explain case study in reality that relate to subject and major. On the other hand, this method helps students have teamworking skills, form autonomy and responsibility, improve students lifelong learning ability.

Discussion method is applied in seminar knowledge section. The object of this method is to help students practise presentaion skill, discussion skill, self-study skill, teamworking skill. This method helps students have teamworking skills, form autonomy and responsibility, improve students lifelong learning ability.

Practice method is used in practical section or integrted into the content of the course. The purpose is to practice and pratical skills to help students verify the theoretical content of the subject. Thereby improving professional skills.

1.7.2. Teaching quality improvement

- The cirriculum is reviewed periodically evey two years to meet the stakeholder requirements

- In each semester, the division constructs the schedule lecturer's class observation a especially young teachers to discussion and sharing knowledge and teaching methods, in order to improve teachers' capacity.

- All of subject in cirriculum are colleted feedback from students about the ethical quality, pedagogical style, and responsibilities of the lecturer.

1.8. Assessement method

The example: Assessment matrix description for course learning outcomes and criterias of course: Forest Zoology

Table 1. Assessment matrix description for CLOs

CLOs	Attendance	Mid-term exam	Final exam
CLO1	X	X	X
CLO2	X	X	X
CLO3	X	X	X
CLO4	X		X
CLO5	X		X
CLO6	X		X
CLO7	X		X
CLO8	X		
CLO9	X		
CLO10	X		

Table 2. Assessement rubric
Rubric 1: Attendant assessment (20%)

CRITERIA	Weighting (%)	Excellent (8,5 – 10) Excellent (8,5 – 10)	Good (7,0 – 8,4)	Average (5,5 – 6,9) Average (5,5 – 6,9)	Below Average (4,0 – 5,4)	Weak < 4,0
Attend theorytical and disscusional sessions	70%	Attend theorytical and disscusional sessions fully	Attend 90-99% theorytical and disscusional sessions	Attend 85-89% theorytical and disscusional sessions	Attend 80-84% theorytical and disscusionl sessions	Attend below 80% theorytical and disscusional sessions
Attitude in participating theoretical, practical hours and discussion	20%	Go to class on time, do not make noise, do not do personal work, actively speak to build lessons.	Be late for class once, being reminded of making noise, or doing private work once. Volunteer to build the lesson	Be late to class twice or more, be reminded of disorderly or working separately twice or more. Answer questions is not good	Be late twice to 3 times, be reminded of making noise, or doing private work twice to 3 times. Rarely participate in answering in class	Be late > 3 times, be reminded of making noise or doing private work > 3 times. Do not participate in answering during class time

Assignment complement	10%	Complete and submit assignments on time, very good-quality assignments	Complete and submit assignments on time, good-quality assignments	Submit assignments, satisfactory quality, be on time	Submit incomplete assignments, unsatisfactory quality, not on time	Submission of assignments that are low-quality, or not on time

Rubric 2: Mid-term assessment (R2)

Criteria	Weighting (%)	Excellent (8,5 – 10)	Good (7,0 – 8,4)	Average (5,5 – 6,9)	Below Average (4,0 – 5,4)	Weak < 4,0
Essay exam	100	Correct answer 85 – 100% according to mark scale in answer	Correct answer 70 – 84% according to mark scale in answer	Correct answer 55 – 69% according to mark scale in answer	Correct answer 40 – 54% according to mark scale in answer	Correct answer <40% according to mark scale in answer

Rubric 3: Final exam assessment (R3)

Format: Computer-based multiple-choice examination

Criteria	Weighting (%)	Excellent (8,5 – 10)	Good (7,0 – 8,4)	Average (5,5 – 6,9)	Below Average (4,0 – 5,4)	Weak < 4,0
Answer multiple choice questions	50 quetions (Mark: 10)	43-50 answers	35-42 answers	28-34 answers	20-27 answers	20 answers

1.8.1.Assessement form and score weighting

- Using 10 scale score for all of course.

1.8.2 Assessement criterias and scale score (Rubric)

2. Training program description

2.1 Training program structrure

The number of credits: 120 credits excluding 165 hours of National defense education, 3 credits of physical education, 5 credits of skilled practice.

CONTENT	No. of credits
A. Compulsory subjects	**42**
I. Selective subjects	**38**
a) a) Political science	*19*
b) b) Language, Informatic, Natural science	*28*
II. Electives subjects	**4**
III. Physical education *	**3**
IV. National defense education *	**165 hours**
B. Professional knowlegde	**78**
I. Fundamental courses	*18*
c) Compulsory subjects	*12*
d) Selective subjects	*6*
II. Specialized courses	*33*
a) Compulsory subjects	*18*
b) Selective subjects	*15*
III. Supplementary Knowledge	*12*
c) Compulsory subjects	*6*
d) Selective subjects	*6*
IV. Field Practice	*5*
*V. Skilled Practice *	*5*
VI. Thesis	*10*
Total	**120**

2.2 Training program contents

List	Subject	English name	No. of credits	Theorical hours	Practical hours	Course Code
A	**Kiến thức Đại cương**	**Basic courses**	**42**			
I	*Các học phần bắt buộc*	*Cores*	*38*			
a)	*Lý luận chính trị*	*Political science*	*10*			
1	Những nguyên lý cơ bản của chủ nghĩa Mac – Lenin (Nguyên lý 1)	Fundamental Principles of Marxism and Leninism (FP1)	2	30	0	MLP121
2	Những nguyên lý cơ bản của chủ nghĩa Mac – Lenin (Nguyên lý 2)	Fundamental Principles of Marxism and Leninism (FPII)	3	45	0	MLP132
3	Tư tưởng Hồ Chí Minh	HoChiMinh's Ideology	2	30	0	HCM121

List	Subject	English name	No. of credits	Theorical hours	Practical hours	Course Code
4	Đường lối cách mạng của ĐCSVN	Revolutionary Orientation and Policies of Vietnamese Communist Party	3	45	0	VCP131
b)	*Ngoại ngữ, tin học, khoa học tự nhiên*	*Language, Informatics, Natural science*	*28*			
5	Hóa học	Chemistry	4	50	20	CHE141
6	Sinh học	Biology	3	40	10	BIO121
7	Xã hội học đại cương	General Sociology	2	30	0	GSO121
8	Vật lý	Physics	2	30	0	PHY121
9	Toán cao cấp	Mathematic	2	30	0	MAT121
10	Tiếng Anh 1	English 1	3	45	0	ENG131
11	Tiếng Anh 2	English 2	3	45	0	ENG132
12	Tiếng Anh 3	English 3	3	45	0	ENG133
13	Tin học đại cương	General Informatics	3	15	60	GIN131
14	Xác suất - Thống kê	Probability and Statistics	3	45	0	PST131
II	*Các học phần tự chọn đại cương (Chọn 04 TC)*	*Electives*	*4*			
15-16	Khoa học quản lý	Science in Management	2	30	0	MEC121
	Vi sinh vật đại cương	General Microorganism	2	24	12	GMI121
	Sinh thái môi trường	Environmental Ecology	2	30	0	EEC121
	Địa lý kinh tế Việt Nam	Vietnam Economic Geography	2	30	0	VEG121
	Nhà nước và pháp luật	Laws and regulations	2	30	0	SLA121
	Ô nhiễm Môi trường	Environmental Pollution	2	30	0	EPO121
	Sinh học phân tử	Molecular Biology	2	30	0	MBI121
	Phương pháp tiếp cận khoa học	Scientific Approach Methodology	2	30	0	SAM121
	An toàn lao động	Works Safety and Hygenic	2	30	0	WSH121
III	*Giáo dục thể chất* (chọn đủ 3TC)*	*Physical Education*	*3*			
17-19	Tay không, điền kinh	Athletics	1			PHE111+ PHE112+ PHE113
	Bóng chuyền	Volleyball	1			
	Cầu lông	Badminton	1			
	Đá cầu	Shuttlecock	1			
	Võ	Kungfu science	1			
	Bóng rổ	Basketball	1			
	Bóng đá	Soccer	1			
IV	*Giáo dục quốc phòng**	*Military Science Education*	*165*			
B	**Kiến thức giáo dục chuyên nghiệp**	**Professional Knowledge**	**78**			
I	*Kiến thức cơ sở ngành*	*Fundemental courses*	*18*			
a)	*Các học phần bắt buộc*	*Cores*	*12*			

List	Subject	English name	No. of credits	Theor ical hours	Prac tical hour s	Course Code
17	Thực vật rừng	Forest plants	3	35	20	FPL231
18	Đo đạc lâm nghiệp	Forest Measurement	3	30	15	FME231
19	Đa dạng sinh học	Biodiversity	3	39	12	BDI331
20	Sinh thái rừng	Forest Ecology	3	45		FEC231
b)	*Các học phần tự chọn (Chọn 6 TC trong các học phần dưới đây)*	*Electives*	6			
5 - 6	Phương pháp nghiên cứu khoa học	Scientific Research Methodology	3	35	20	EME231
	Khoa học gỗ	Wood Science	3	39	12	WSC231
	Nguyên lý bảo tồn	Principle of Conservation	3	45		PPR231
	Kinh tế vi mô	Microeconomics	3	45		MIC231
	Luật và chính sách QLTNR	Laws and policies in forest resource management	3	45		LPF231
II	**Kiến thức ngành**	***Special courses***	**33**			
a)	*Các học phần bắt buộc*	*Cores*	18			
7	Ứng dụng GIS trong Lâm nghiệp	Applied GIS in Forestry	3	15	60	AGF331
8	Sâu bệnh hại rừng	Forest Entomology and pathology	3	37	16	FEP331
9	Nghiệp vụ kiểm lâm	Forest Range Administration	3	45		FRA331
10	Điều tra sản lượng rừng	Forest Inventory and yield modelling	3	35	20	FIY331
11	Kỹ thuật lâm sinh	Silviculture	3	35	20	SIL331
12	Quản lý lửa rừng	Forest management	3	37	16	FMA331
b)	*Các học phần tự chọn (Chọn 15 TC trong các học phần dưới đây)*	*Electives*	15			
13-17	Động vật rừng	Forest animals	3	45		FAN331
	Đất và sử dụng đất LN	Forest soil science	3	37	16	FSS331
	Trồng rừng	Afforestation	3	37	16	AFF331
	Kinh tế rừng	Forest economics	3	45		FEC331
	Lâm sản ngoài gỗ	Non-timber forest products	3	37	16	NTF331
	Quản lý lưu vực	Watershed management	3	37	16	WMA331
	Phân tích chính sách trong QLTNTN	Analysis and Assessment Policy in Natural Resourse Management	3	45		AAP331
	Quản lý xung đột trong bảo tồn	Conservation Conflict Management	3	45		CCM331
	Chọn giống cây rừng	Forest breedings	3	37	16	FBR331
	Đánh giá và giám sát đa dạng sinh học	Assessment and monitoring of biodiversity	3	45		AMO331
	Quản lý rừng bền vững	Sustainable forest management	3	45		SFM331
	Lâm nghiệp cộng đồng	Community Forest management	3	45		CFM331
	Hệ thống nông lâm kết	Agroforestry system	3	37	16	ASY331

List	Subject	English name	No. of credits	Theor ical hours	Prac tical hour s	Course Code
	hợp					
	Truyền thông trong quản lý tài nguyên	Communication in natural resources management	3	37	16	CNR331
	Đánh giá tác động môi trường	Environmental Impact Assessment	3	45		EIA331
	Quản lý môi trường & PT bền vững	Environmental Management & Sustainable Development	3	45		EMS331
	Quản trị rừng	Forest governance	3	45		FGO331
	Du lịch sinh thái	Ecotourism	3	45		ECO332
	Biến đổi khí hậu	Climate Change	3	45		CCH331
III	*Kiến thức bổ trợ*	*Supplemental Knowledge*	*12*			
a)	*Các học phần bắt buộc*	*Cores*	*6*			
18	Dịch vụ môi trường rừng	Forest environmental services	3	45		FES431
19	Quản lý các hệ sinh thái	Ecosystems management	3	45		EMA431,
b)	*Các học phần tự chọn (Chọn 6 TC trong các học phần dưới đây)*	*Electives*	*6*			
20-21	Khởi sự và kinh doanh	Startup and Entrepreneurship	3	45		SEN431
	Quản lý dự án	Project Management	3	45		PMA431
	Marketing	Marketing	3	45		MAR431
	Xây dựng và PT thương hiệu sản phẩm	Building and development Products Branding	3	45		BDP431
	Nghiệp vụ hướng dẫn viên du lịch	Tour Guiding/Escort Services	3	45		TGS431
	Quản trị doanh nghiệp	Enterprise Administration	3	45		EAD431
	Phân tích chuỗi giá trị	Value chain analysis	3	45		VCA431
IV	*Thực tập nghề nghiệp*	*Professional Practice*	*5*			
22	TTNN1: Tìm hiểu hoạt động bảo tồn tại VQG/khu bảo tồn	Internship 1. Learn conservation activities at the National Park / Nature Reserve	1	15		
23	TTNN2: Lập kế hoạch quản lý rừng bền vững	Internship 2. Planning sustainable forest management	2		30	
24	TTNN3: Nghiệp vụ hành chính kiểm lâm	Internship 3. Administrative service of forest rangers	2		30	
V	*Thực tập tốt nghiệp*	*Thesis*	*10*			
	Tổng cộng	**Total**	**120**			

VII	***Rèn nghề*** *(Không tính vào điểm TBC) chọn trong các HP sau đủ 5TC:*	***Skills practice***	*5*			
25	RN1. Đo đạc và xây	Skills practice 1: Measurement and	3		45	

List	Subject	English name	No. of credits	Theorical hours	Practical hours	Course Code
	dựng bản đồ số	construction of digital map				
	RN1: Ứng dụng QGIS trong theo dõi diễn biến tài nguyên rừng.	Skills practice 1: Applied QGIS	3		45	
26	RN2: Xây dựng phương án và sử dụng công cụ trong QLBVR và PCCCR	Skills practice 2: Construction of plan for sustainable foestry management & fire protection	2		30	
	RN2: Thiết kế trồng rừng	Skills practice 2: Afforestation design	2		30	
	RN2: Ứng dụng CNSH trong sản xuất giống cây LN	Skills practice 2: Applied biotechnology in forest breedings	2		30	

3. Training schedule

The training program is arranged by semester, specifically as follows:

1. The first year

* The first semester

List	Subject	No. of credits	Theorical hours	Practical hours
1	Biology	3	40	10
2	General Sociology	2	30	
3	Mathematics	2	30	
4	English 1	3	45	
5	Chemistry	4	50	20
6	Fundamental Principles of Marxism and Leninism (FP1)	2	30	
7	Physical education 1	1		30
8	Internship 1. Learn conservation activities at the National Park / Nature Reserve	1		30
	Total	**18**		

* Second Semester

List	Subject	No. of credits	Theorical hours	Practical hours
1	Fundamental Principles of Marxism and Leninism (FPII)	3	45	
2	English 2	3	**45**	

3	Forest Ecology	3	45	
4	Probability and Statistics	3	45	
5	Physical education 2	1		30
6	Physics	2	30	
7	Electives basic subject 1	2	30	
	Total	**17**		

2. The second year

* 3rd Semester

List	Subject	No. of credits	Theorical hours	Practical hours
1	English 3	3	45	
2	General Informatics	3	15	60
3	Electives basic subject 2	2	45	
4	Forest Measurement	3	30	30
5	Physical education 3	1		30
	Military Science Education (165 hours)		165	
	Total	**12**		

* 4th Semester

List	Subject	No. of credits	Theorical hours	Practical hours
1	Forest plants	3	35	20
2	Biodiversity	3	39	12
3	Forest Entomology and pathology	3	37	16
4	Electives fundemental subject 1	3	45	
5	Forest Inventory and yield modelling	3	35	20
6	Skill practice 1	3		90
	Total	**18**		

3. The third year
* 5th Semester

List	Subject	No. of credits	Theorical hours	Practical hours
1	Electives fundemental subject 1	3	45	
2	Applied GIS in Forestry	3	15	60
3	Silviculture	3	35	20
4	HoChiMinh's Ideology	2	30	
5	Forest fire management	3	45	
6	Internship 2. Planning sustainable forest management	2		30

List	Subject	No. of credits	Theorical hours	Practical hours
7	Skill practice	2		60
	Total	**16**		

* 6th Semester

List	Subject	No. of credits	Theorical hours	Practical hours
1	Forest Range Administration	3	45	
2	Revolutionary Orientation and Policies of Vietnamese Communist Party	3	45	
3	Electives specieal subject 1	3	36	9
4	Electives specieal subject 2	3	36	9
5	Electives specieal subject 3	3	36	9
6	Ecosystems management	3	45	
	Total	**18**		

4. The fourth year
* 7th Semester

List	Subject	No. of credits	Theorical hours	Practical hours
1	Forest environmental services	3	45	
2	Electives specieal subject 4	3	36	9
3	Electives specieal subject 5	3	36	9
4	Selective subjects 1	3	45	
5	Selective subjects 2	3	45	
6	Internship 3. Administrative service of forest rangers	2		30
	Total	**17**		

* 7th Semester

List	Subject	No. of credits	Theorical hours	Practical hours
1	Thesis	10		
	Total	**10**		

4. Program implementation instructions

a. The training program is implemented in accordance with the regulations on formal university training under the current credit system of the Ministry of Education and Training and Thai Nguyen University of Agriculture and Forestry

The prescribed hours are calculated as follows:

1 credit = 15 theoretical lectures or class discussions

= 30 hours of experimentation or practice

= 45 hours of self-study

= 45 ÷ 90 hours of on-site practice.

= 45 ÷ 60 hours of implementation of the project or thesis.

The number of hours of the course is a multiple of 15

b. Standards of foreign language output: According to regulations of Thai Nguyen University of Agriculture and Forestry. During the study period, the University may control the development of student's language skills through each academic year to determine the number of credits for courses in the semester that student is allowed to enroll in. Student can self-study or apply for the language skills development program under the school's scheme