

THAI NGUYEN UNIVERSITY  
UNIVERSITY OF AGRICULTURE AND FORESTRY

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THE BACHELOR PROGRAM  
MAJOR: FOREST RESOURCE MANAGEMENT  
(In compliance with Circular No. 07/20215/TT-BGDDT dated April 16,  
2015 of the Minister of Education and Training)

Major: Forest Resource Management  
Level: Undergraduate  
CODE: 7620211

Thai Nguyen, 2016

**BRIEF OUTLINE OF ALL COURSES IN  
FOREST RESOURCES MANAGEMENT**

*Decision No 1728/QĐ-KT & ĐBCLGD dated December 31<sup>st</sup>, 2016 issued by Rector of  
Thai Nguyen University of Agriculture and Forestry – Thai Nguyen University*

**Briefly describe the content and volume of the subjects**

**1. Fundamental Principles of Marxism and Leninism (FP1) - 2 credits**

Time of study: 2 credit points (30 Theoretical hours /0 practical hours/60 self-study hours).

Summary of subject content: Establishing the most basic theoretical basis to approach Basic principles of Marxism-Leninism (II), Ho Chi Minh Thought and Revolutionary Way of the Communist Party of Vietnam, understanding the ideological foundation of the Party; Building trust, revolutionary ideals for students; To gradually establish worldview, human outlook and methodology to approach the specialized sciences trained.

**2. Fundamental Principles of Marxism and Leninism (FP2) - 3 credits**

Time of study: 3 credits (45 theoretical hours/0 practical hours/90 self-study hours).

Summary of subject content: Establishing the most basic theoretical basis to approach Ho Chi Minh Thought and Revolutionary Way of the Communist Party of Vietnam, understanding the ideological foundation of the Party; Building trust, revolutionary ideals for students; To gradually establish worldview, human outlook and methodology to approach the specialized sciences trained.

**3. Ho Chi Minh's **Thought** - 2 credits**

Time of study: 2 credits (30 theoretical hours/0 practical hours/60 self-study hours).

Summary of subject content: **Providing** a system of Ho Chi Minh's views and ideas in the revolutionary cause, summarized and systematized by the Communist Party of

Vietnam. This ideological system includes views on basic issues of the Vietnamese revolution, from the people's democratic revolution to the socialist revolution; applying and developing Marxism-Leninism in Vietnam's specific conditions. After completing this module, students will increase their awareness of regularly practicing, cultivating, studying and following the example of Ho Chi Minh's ethical and style to increasingly improve themselves and contribute to building country.

#### **4. Revolutionary orientation of the Communist Party of Vietnam – 3 credits**

Time of study: 3 credits (45 theoretical hours/0 practical hours/90 self-study hours).

Summary of subject content: Students know and understand the views and revolutionary orientation of the Communist Party of Vietnam in a basic and systematic way. Students apply and combine specialized knowledge to actively solve economic, political, cultural and social problems according to the guidelines, policies and laws of the Party and State.

#### **5. Chemistry - 2 credits**

Time of study: 2 credits (25 theoretical units/05 practical units/60 self-study hours).

Summary of subject content: Chemistry module consists of 6 chapters, including 50 theoretical periods and 10 practical periods. The theoretical part equips students with basic knowledge of chemical balance, the factors affecting chemical balance; explaining the transition of the reversible reaction; reaction speed and influencing factors. At the same time, it also provides basic concepts and knowledge about the solution. The practical part equips students with some basic laboratory rules; research experiments on the effects of factors on chemical balance, reaction speed, explanation and application in practice; practice determining the pH value of some common solutions; research on titration experiments, determine the content of analyzed samples.

#### **6. Analytical Chemistry – 2 credits**

Time of study: 2 credits (25 theoretical hours/05 practical hours/120 self-study hours).

Summary of subject content: The module equips students with methods of sampling and handling analytical samples; basic tools and operations in chemical analysis; methods

of preparing chemicals and solutions; qualitative analysis, quantitative analysis, volumetric analysis and instrumental analysis (colorimetric, chromatographic, electrochemical).

## **7. General Biology – 2 credits**

Time of study: 2 credits (25 theoretical hours/05 practical hours/60 self-study hours).

Summary of subject content: The course consists of 7 chapters. The theoretical part equips students with basic knowledge about the chemical composition of living organisms, the levels of organization of living organisms, the major metabolic modes in living cells, reproduction growth and development of living organisms, the ability to touch and adapt to the living environment of organisms, the evolution of organisms, the application of Biology in agriculture and forestry. The practical part equips students with some basic rules in the laboratory; research and practice making living specimens of plants; observing a number of fixed specimens of animal cells; visual observation of the reproductive organs of some flowers; observing and classifying some fruits in order to actualize the theoretical content to help students deepen their knowledge

## **8. Advanced Math 1 - 2 credits**

Time of study: 2 credits (30 theoretical hours/0 practical hours/60 self-study hours).

Summary of subject content: Advanced Math includes 3 chapters with 17 theoretical periods and 13 discussion periods. Theoretical part: Equipping the concepts of matrices, matrix operations, application of matrices in real problems; system of linear equations, knowing how to solve the system of mathematical equations; differential equations, different types of differential equations and some applications of differential equations; some optimal mathematical types in agriculture and forestry and methods to solve the optimal problem. Discussion part: Asking students to apply the learned methods to solve problems, especially being proficient in using software (Excel) on the computer to solve problems of matrices, system of linear equations and optimal problems.

## **9. Probability and Statistics – 3 credits**

Time of study: 3 credits (45 theoretical hours/0 practical hours/90 self-study hours).

Summary of subject content: The Statistical Probability module consists of 2 parts: Probability and Statistics with 27 theory periods and 18 discussion periods. Theory part:

Equip knowledge about trials, events, probability of events; random variables (BNN), probability distribution rules and characteristic parameters of BNN; population, sample, sample characteristic parameters and calculation method; parameter estimation; parameter testing; correlation and regression. Practical part: Ask students to calculate the probabilities of events through formulas; determine the probability distribution rule and calculate the characteristic parameters of BNN; proficiently solve problems of estimation, parameter testing, find correlation coefficients and write regression equations of two random variables.

#### **10. English 1 – 3 credits**

Time of study: 3 credits (45 theoretical hours/0 practical hours/90 self-study hours).

Summary of subject content: This module equips students with the basic and core knowledge of Grammar (sentence structure, verb tenses...), Phonetics (stress & intonation), and Vocabulary (words & intonation) consist of); Consolidate the basic phenomena of Grammar, Phonetics and Vocabulary mentioned above as a basis for practice in communication; Initial formation of language communication skills such as Listening, Speaking, Reading and Writing on the basis of mastering theory and proficient practice; Basic concepts of the interdisciplinary relationship between Language, Culture and speech act.

#### **11. English 2 – 2 credits**

Time of study: 2 credits (30 theoretical hours/0 practical hours/60 self-study hours).

Summary of subject content: This module equips knowledge about countable and uncountable nouns; quantity words, articles; future tense with be going to, will; the present continuous refers to the near future; prepositions of place; present perfect; relative clauses and conditional sentences type 1. Words indicating material; linking words; synonym; occupation words; suffixes; prefixes; environmental knowledge; life; events; workplace; plans and intentions; job interview; the importance of technology; new inventions....

#### **12. English 3 - 3 credits**

Time of study: 3 credits (45 theoretical hours/0 practical hours/90 self-study hours).

Summary of subject content: This module provides students with basic and core

knowledge of Grammar (sentence structures, verb tenses ...), Pronunciation (stress & intonation), and Vocabulary (words & word formation). Consolidating these basic Grammar, Pronunciation and Vocabulary to work as a basis for practice in communication; Initially forming language skills such as Listening, Speaking, Reading, and Writing through firm theory and proficient practice; Helping students understand the basic concepts of interdisciplinary relationships between language, culture and verbal communication.

Grammar: Passive sentences (present and past); Past Perfect Tense; Used to; reported speech; uncertain pronouns; conditional sentence type 2;

Vocabulary: verb phrases; holiday-related words; independent preposition; classification of animals; weather.

Reading: history; language; travel and vacation; nature.

Listening: learning languages; travel; nature.

Speaking: plan for vacation; predict the future.

Writing: letter; story.

Pronunciation: sound / s /, / z /, / stress.

After completing this module, students will be able to communicate in English, text documents in English, and read documents in English at pre-intermediate level.

### **13. General Informatics - 3 credits**

Time of study: 3 credits (30 theory periods /15 practical periods / 90 self-study periods).

Summary of subject content: The course equips students with knowledge of computers and computer networks, skills to use basic informatics applications. After completing this module, students can be proficient in using computers; work on Windows operating systems and some application programs; know how to effectively manage and exploit information on computers, use computers safely and have legal knowledge on the use of information technology; be proficient in Microsoft Word to compose and present a complete document in a form, use a number of auxiliary tools for faster word processing; use Microsoft Excel to build a complete database to solve real problems; use calculation functions in Excel from basic to complex to calculate, statistic, and filter necessary

information; use Microsoft PowerPoint to create an engaging and effective presentation; know how to exploit and connect information available on the Internet to serve learning and research; know how to use email to send and receive documents.

#### **14. General Sociology – 2 credits**

Time of study: 2 credits (30 theoretical hours/0 practical hours/60 self-study hours).

Summary of subject content: The subject of General Sociology is a compulsory subject in order to systematically equip students with basic knowledge of sociology, including: objects, functions and research tasks of sociology; basic sociological concepts. Based on of these basic concepts, students can understand the relationships between individuals, groups and society; position and role of individuals, social groups, institutions, social organizations, social classes and classes in a society. Based on the knowledge, educating students on sociology professional ethics in the present construction of our country.

#### **15. State and Law - 2 credits**

Time of study: 2 credits (30 theoretical hours/0 practical hours/60 self-study hours).

Summary of subject content: The State and Law module provides students with basic knowledge about the state and law such as: origin, nature, form, types of state and law in history; basic legal concepts such as: legality, legal relations, law enforcement, law violation, liability, socialist legality, legal system;

the basic contents of a number of important branches of law in the Vietnamese legal system and the law on anti-corruption.

#### **16. Scientific Approach Methodology – 2 credits**

Time of study: 2 credits (30 theoretical hours/0 practical hours/60 self-study hours).

Summary of subject content: The subject Scientific Approach Methodology aims to help students know how to approach science, some scientific research methods, how to organize, implement and write a report of science research... so that when finished, students can participate in scientific research creatively. Students understand the principles of conducting scientific research, the basic knowledge about selecting research problems, scientific research methods, conducting research to participate in scientific research.

Identify a research problem and propose a scientific research topic name; make a scientific research outline and have a serious attitude in scientific research.

### **17. Practical Vietnamese Language – 2 credits**

Time of study: 2 credits (15 theoretical hours/15 practice hours/60 self-study hours).

Summary of subject content: The subject equips skills in word processing, application writing, writing skills, how to analyze a scientific document, sentence making, word use, and spelling skills.

### **18. Environmental Ecology – 2 credits**

Time of study: 2 credits (30 theoretical hours/0 practical hours/60 self-study hours).

Summary of subject content: This subject is divided into 5 main parts: General concepts in ecology; Individual ecology; Populations and biomes; Ecosystem; Ecology with environmental resource management. Providing basic knowledge of ecology; interactions between organisms and the environment. On that basis, it is applied to the management and protection of the living environment and exploitation of natural resources in a more reasonable and effective manner.

### **19. Molecular Biology - 2 credits**

Time of study: 2 credits (30 theoretical hours/0 practical hours/60 self-study hours).

Summary of subject content: Molecular biology is a subject on the organization of life at the molecular level, providing basic knowledge about biological macromolecules (DNA, RNA, proteins) and how to organize and operate their life at the molecular level. As a foundation for students to understand the methods of testing and evaluating food using Molecular Biology tools.

### **20. Physics- 2 credits**

Time of study: 2 credits (30 theoretical hours/0 practical hours/60 self-study hours).

Summary of subject content: The Physics module consists of 5 chapters with 17 theory periods and 13 exercises and discussions. Theory part: equips students with general understanding of mechanics, basic forms of motion associated with practice, and fundamental laws of Newton; concepts and phenomena commonly encountered in fluid mechanics, analyzing important applications of fluid mechanics in agriculture and forestry;



equipping with basic knowledge of electromagnetic fields, electromagnetic waves and applications to the majors of agriculture and forestry; provide some knowledge about photo-wave optics, photonics, photo genesis processes; Basic knowledge of nuclear physics and the use of some nuclear techniques in Food Technology. Exercises and discussions: Require students to apply the knowledge they have learned in each chapter to solve real-world problems,

explain phenomena, apply learned knowledge in the right major.

### **21. Applied Mathematics – 2 credits**

Time of study: 2 credits (30 theoretical hours/0 practical hours/60 self-study hours).

Summary of subject content: The subject equips students with knowledge of multivariate analysis methods: linear regression model, analysis of variance model, logistic regression model, principal component analysis and factor analysis. Use some software for multivariate analysis, prediction, estimation, autoregressive modeling, spectrum analysis. Using computer software packages to analyze data.

### **22. Work Safety and Hygiene – 2 credits**

Time of study: 2 credits (30 theoretical hours/0 practical hours/60 self-study hours).

Summary of subject content: The module equips with basic knowledge about safety in production (using machines, using electricity, noise, dust...) and knowledge on fire safety, chemical safety and solutions for propaganda and control of occupational safety.

### **23. Environmental Pollution – 2 credits**

Time of study: 2 credits (30 theoretical hours/0 practical hours/60 self-study hours).

Summary of subject content: The subject Environmental Pollution aims to meet the requirements of improving quality for students of schools in the management and engineering professions, as well as those who are working in factories, companies, enterprises, etc. research institutes, schools and government agencies, to provide students with an overview of knowledge about the environment, its composition, the role of the environment, the relationship between development and sustainable development, especially the problem of environmental pollution and wastewater, emissions and solid waste. The subject introduces the basic concepts of the main types of environmental

pollution, the causes of pollution, the agents and harmful effects of environmental pollution as well as measures to prevent and minimize environmental pollution. The subject consists of 5 main contents as follows: theoretical basis of environmental pollution, air pollution, water pollution, environmental pollution, soil and other forms of environmental pollution.

#### **24. Vietnam Economic Geography – 2 credits**

Time of study: 2 credits (30 theoretical hours/0 practical hours/60 self-study hours).

Summary of subject content: The subject of Economic Geography is a socioeconomic science that studies the current situation and development orientation of Vietnam's natural resources. Vietnam's ability to integrate in the region and in the world; international economic linkage organizations affect Vietnam's socio-economic development; organization of territories, branches and economic regions of Vietnam.

#### **25. Physical Exercises, Athletics - 1 credit**

Time of study: 1 credit (0 theoretical hour/15 practical hours/30 self-study hours).

Summary of subject content: The subject equips students with knowledge and skills to practice physical exercises and perform athletic content such as running... After completing this module, students will improve the awareness of regular exercises to have a better spirit of learning and working.

#### **26. Volleyball - 1 credit**

Time of study: 1 credit (0 theoretical hour/15 practical hours/30 self-study hours).

Summary of subject content: The subject equips students with knowledge and skills of volleyball. After completing this module, students will improve their awareness of regular exercise to have a better spirit of learning and working.

#### **27. Badminton - 1 credit**

Time of study: 1 credit (0 theoretical hour/15 practical hours/30 self-study hours)

Summary of subject content: The subject equips students with knowledge and skills of badminton. After completing this module, students will improve their awareness of regular exercises to have a better spirit of learning and working.

#### **28. Shuttlecock - 1 credit**

Time of study: 1 credit (0 theoretical hour/15 practical hours/30 self-study hours)

Summary of subject content: The subject equips students with knowledge and skills of shuttlecock. After completing this module, students will improve their awareness of regular exercises to have a better spirit of learning and working.

### **29. Kungfu science - 1 credit**

Time of study: 1 credit (0 theoretical hour/15 practical hours/30 self-study hours)

Summary of subject content: The subject equips students with knowledge and skills of Kungfu science. After completing this module, students will improve their awareness of regular exercises to have a better spirit of learning and working.

### **30. Basketball - 1 credit**

Time of study: 1 credit (0 theoretical hour/15 practical hours/30 self-study hours)

Summary of subject content: The subject equips students with knowledge and skills of basketball. After completing this module, students will improve their awareness of regular exercises to have a better spirit of learning and working.

### **31. Soccer - 1 credit**

Time of study: 1 credit (0 theoretical hour/15 practical hours/30 self-study hours)

Summary of subject content: The subject equips students with knowledge and skills of soccer. After completing this module, students will improve their awareness of regular exercises to have a better spirit of learning and working.

### **32. Forest Measurement - 2 credits**

Time of study: 2 credits (15 theoretical hours/15 practical hours/60 self-study hours).

Summary of subject content: The module equips students with the knowledge base on measuring and map, how to use measuring tools and using map in the management of forest and land resources. Special response to the work of planning and designing the business of afforestation. Students understand the mathematical basis on measuring; using topographic maps in forestry; measuring basic factors; establishing forest maps and managing the exploitation of forest maps.

### **33. Agriculture- Meteorology – 2 credits**

Time of study: 2 credits (24 theoretical hours/6 discussion hours/60 self-study hours).

Summary of subject content: Agriculture - Meteorology provides basic knowledge about the atmosphere, basic meteorological factors, weather and climate as well as the interaction between forests and hydro-meteorological conditions. This is an important foundation to help students understand the effects or roles of climate factors on forest and build plans for professional work such as forest fire prevention, afforestation...At the end of the module, students are able to analyze the basic meteorological factors, the influence of meteorological factors on plants, the interaction between forests and hydro-meteorological conditions.

### **34. Wood Science - 2 credits**

Time of study: 2 credits (26 theoretical hours/04 practical hours/60 self-study hours).

Summary of subject content: The module equips with basic knowledge about the structure of wood, from that students are able to know some common wood species in Vietnam. Providing the basic knowledge about wood properties: physical, mechanical, and chemical properties and defects of wood, from that using reasonable wood in practice. The module content includes: i) Wood structure; ii) Chemical composition in wood; iii) Physical properties of wood; iv) Mechanical properties of wood; v) Wood defects.

### **35. Biodiversity - 2 credits**

Time of study: 2 credits (30 theoretical hours/0 practical hours/60 self-study hours).

Summary of subject content: The subject provides students with knowledge related to the value of biodiversity and conservation, biodiversity loss, conservation misconceptions, the relationship between conservation and sustainable development in the context of climate changes. Forming skills in biodiversity conservation analysis and planning, biodiversity conservation research.

### **36. Botany - 2 credits**

Time of study: 2 credits (20 theoretical hours/10 practical hours/60 self-study hours).

Summary of subject content: The module equips students **with** the knowledge about methods to distinguish and identify forest plant species. Identify and distinguish some common tree species in forestry production.

### **37. Experimental Methodology in Forestry - 2 credits**

Time of study: 2 credits (24 theoretical hours/6 practical hours/60 self-study hours).

Summary of subject content: The module equips students with knowledge to use mathematical statistic in their work: collecting, processing, analyzing data and evaluating results in forestry research. Understanding the methods, processes and skills of data processing in forestry on some statistical software and following strictly the processing procedures.

### **38. Forest Ecology - 2 credits**

Time of study: 2 credits (24 theoretical hours/6 practical hours/60 self-study hours).

Summary of subject content: The module equips students with basic knowledge about forest ecology, forest structure, interrelationship between forest and ecological factors, knowledge of forest vegetation classification according to Thai Van Trung 1970, 1978; skills in describing and analyzing the silvicultural characteristics of the forest (trees, shrubs, regenerated trees, soil, topography...); explaining the interrelationship between forest and environmental ecological factors; building and explaining some scientific bases of silvicultural methods (mixed afforestation, selective harvesting, white-cutting, forest regeneration...); classification of forest vegetation types according to Thai Van Trung.

### **39. Principle of Conservation - 2 credits**

Time of study: 2 credits (24 theoretical hours/06 discussion hours/60 self-study hours).

Summary of subject content: The module equips students with the basic knowledge of biology conservation; the approach method in species conservation, populations and ecosystems; principles of restoration of degraded ecosystems and threatened populations; principles of conservation and sustainable development.

### **40. Forest Product Exploitation - 2 credits**

Time of study: 2 credits (24 theoretical hours/06 discussion hours/60 self-study hours).

Summary of subject content: Understanding the basic concepts of forest product exploitation; understanding the methods in harvesting and transporting forest products;

understanding the methods in forest product preservation and applying the learned knowledge to practice of harvesting, transporting and preserving forest products.

#### **41. Social Forestry - 2 credits**

Time of study: 2 credits (24 theoretical hours/06 discussion hours/60 self-study hours).

Summary of subject content: This module helps students to explain and analyze the concepts, perspectives, development situation of social forestry in the world and the birth context of social forestry in Vietnam; list and analyze the implementation of policies related to social forestry development in Vietnam; to present and explain the basic concepts and knowledge about human ecology, sustainable development, indigenous knowledge and gender, analyze participation and approach methods in social forestry.

#### **41. Science in natural resources - 2 credits**

Time of study: 2 credits (24 theoretical hours/06 discussion hours/60 self-study hours).

Summary of subject content: The module will equip students with basic knowledge about the environment, natural resources, and basic principles of ecology. Environmental and natural resource issues include current use status, environmental resource degradation and management solutions. Understanding the knowledge of the management and using right of the natural resources and environmental protection, and understanding the methods of studying ecosystems and identifying their components.

#### **42. Latin language - 2 credits**

Time of study: 2 credits (24 theoretical hours/06 discussion hours/60 self-study hours).

Summary of subject content: The module will get familiar with how to write Latin letters, how to read vowels and consonants in Latin, how to write species names in Latin letters.

#### **43. Forest Pathology - 2 credits**

Time of study: 2 credits (24 theoretical hours/6 practical hours/60 self-study hours).

Summary of subject content: The module will equip students with some basic knowledge about tree diseases in general and forest tree diseases in particular. After completing this module, students will be able to recognize a number of plant disease symptoms, apply these knowledges to prevent a number of plant diseases in production and contribute to improving quality and quantity of the forest.

#### **44. Forest Plants - 2 credits**

Time of study: 2 credits (30 theoretical hours/0 practical hours/60 self-study hours).

Summary of subject content: The module will help students to practice methods of distinguishing and identifying forest plant species, to recognize and distinguish some common tree species in forestry production, to understand the basic knowledge of plants-plants in the pine branch and plants in the angiosperms.

#### **45. Forest Entomology - 2 credits**

Time of study: 2 credits (24 theoretical hours/6 practical hours/60 self-study hours).

Summary of subject content: The module will equip students with basic knowledge about insects in general and forest insects in particular. After completing this module, students can identify and classify beneficial and harmful insects, apply them to practical production to prevent some pests and take advantage of useful insects to improving the quality and quantity of the forest.

#### **46. Forest Zoology - 2 credits**

Time of study: 2 credits (24 theoretical hours/6 practical hours/60 self-study hours).

Summary of subject content: The module will equip students with basic knowledge about forest animals, ecological biology points of forest animals, characteristics of animal classes and characteristics of the order, family and species of the main forest animals; methods of investigation and monitoring of forest animals and the current status of animal resources. From that proposing solutions for conservation and development of forest animals; identify some major forest animals; make a list of forest animals. Students are able to identify the main forest animals belong to terrestrial vertebrate classes; making a list of forest animals, and making **plans** to investigate, monitor and plan to manage and conserve forest animals in a certain area.

#### **47. Forest Management and Protection - 2 credits**

Time of study: 2 credits (24 theoretical hours/6 discussion hours/60 self-study hours).

Summary of subject content: The module will equip students the necessary knowledge, skills and attitudes in the field of forest management and protection to contribute to the management and use of forest resources in a sustainable way. Basic knowledge on management about 3 types of forests, community forest management, methodology in organizing the implementation of forest management and protection, monitoring the changes of forest resources at different levels of objects and management of forest resources and training students to be honest and serious in study, scientific research and their career.

#### **48. Silviculture Techniques - 3 credits**

Time of study: 3 credits (30 theoretical hours/15 discussion hours/90 self-study hours).

Summary of subject content: The module will equip students with basic knowledge about forests, the composition of forests and the laws of arising, growth, development, and destruction of forest ecosystems. From that, students have a basis to distinguish silvicultural methods and apply silvicultural techniques to different types of forests according to different business objectives. Students can distinguish forest ecosystems on the basis of understanding the rules of forest structure to propose reasonable silvicultural techniques.

#### **49. Forests Range Administrative Professionalism - 2 credits**

Time of study: 2 credits (24 theoretical hours/6 discussion hours/60 self-study hours).

Summary of subject content: The module will equip students with knowledge related to forest ranger organizational structure, functions and duties of rangers; activities of inspecting, controlling, certifying the origin and making records of forest products, handling administrative violations in the forestry sector, investigating cases under the



authority of forest protection agencies, responsibility of forest rangers while on duty, managing the use of weapons and supporting tools while on duty.

#### **50. Forest Inventory - 2 credits**

Time of study: 2 credits (24 theoretical hours/6 practical hours/60 self-study hours).

Summary of subject content: The module will equip students with knowledge, skills and attitudes in the field of forest inventory to contribute to the management and use of forest resources in a sustainable way; basic knowledge of methods to investigate individual trees, determine volume of trunks, forest stand survey, investigation factors and methods of determination, survey methods to determine the forest stand reserve; methods of forest resources investigation. Methodology in organizing the survey and monitoring of forest resource change at different objects and management levels. Training students to be honest, serious in study, scientific research and their career.

#### **51. Analysis and Assessment Policy in Natural Resource Management - 2 credits**

Time of study: 2 credits (24 theoretical hours/6 discussion hours/60 self-study hours).

Summary of subject content: After completing the module Analysis and Assessment Policy in Natural Resources Management, students could present step-by-step of a policy analysis as well as procedures of a policy assessment.

#### **52. Non timber Forest Products - 2 credits**

Time of study: 2 credits (24 theoretical hours/6 discussion hours/60 self-study hours).

Summary of subject content: The module will equip students with knowledge about non-timber forest products (NTFPs) (concept of NTFPs, value analysis of NTFPs and bases for classifying NTFPs, analysis of the current status of NTFPs in Vietnam, the current status and cultivation techniques of some major NTFP species, organization and management of the current status, policy and legislation in the conservation and development of NTFPs, market of NTFPs, the current status of management of NTFPs and solutions to conservation and development of NTFPs).

#### **53. Forestry Development Policy and Law - 2 credits**

Time of study: 2 credits (24 theoretical hours/6 discussion hours/60 self-study hours).

Summary of subject content: The module will equip students with knowledge of the current forestry law and the content of state management about forestry and forestland based on detailed instructions on the implementation of the law. Students will be able to explain the need to promulgate the forestry law, distinguish new points in the 2017 Forestry Law, the content and methods of state management about forestry, the relationship between the Forestry Law and the Law on Forestry, Law on Land, ... At the same time, students can apply a number of current policies in forestry filed such as: policies on forest protection and development, policies on strengthening forest protection, policies on forest protection and development and investment policies to support infrastructure, assign public utility tasks to agricultural and forestry companies, etc. into practice.

#### **54. Forest fire Management - 2 credits**

Time of study: 2 credits (24 theoretical hours/6 discussion hours/60 self-study hours).

Summary of subject content: The module will equip students with knowledge, skills and necessary attitudes in the field of forest fire management to contribute to the management and use of forest resources in a sustainable way; basic knowledge of methods of forest fire forecasting, forest fire prevention, and forest fire fighting; the methodology in the implementation of forest fire management, monitoring the evolution of forest resources at different objects and management levels of forest resources; and training students to be honest, serious in study, scientific research and their career.

#### **55. Watershed Management - 2 credits**

Time of study: 2 credits (24 theoretical hours/6 discussion hours/60 self-study hours).

Summary of subject content: The module will equip students with knowledge about watersheds, flows, resources in the watersheds, the basis for the selection of watersheds management methods and specific method in watersheds management. Having basic skills in analyzing resources in the watersheds and basing on scientific and practical bases to

apply methods in watersheds management, apply information technology in watersheds management.

#### **56. Environmental Management - 2 credits**

Time of study: 2 credits (24 theoretical hours/6 discussion hours/60 self-study hours).

Summary of subject content: The module will equip students with basic knowledge in environmental management in general and forest environment management in particular.

#### **57. Forest Planning - 2 credits**

Time of study: 2 credits (24 theoretical hours/6 discussion hours/60 self-study hours).

Summary of subject content: The module will equip students with necessary knowledge, skills, and attitudes in the field of forestry planning to contribute to sustainable management and use of forest resources; ability to actively coordinate with stakeholders in formulating, implementing, monitoring and evaluating forestry planning options in line with forestry policies and society's requirements; methodology in organizing the implementation of forestry planning at different subjects and levels of forest resource management.

#### **58. Afforestation - 2 credits**

Time of study: 2 credits (24 theoretical hours/6 practical hours/60 self-study hours).

Summary of subject content: The module will equip students with basic knowledge on forest tree seed production, seedling production in forestry, afforestation and planting of some forest tree species; help students be able to recognize some types of seeds commonly used in afforestation in our country; capable of conducting seed quality assessment and seed germination stimulation treatment for afforestation

#### **59. Forest Production - 2 credits**

Time of study: 2 credits (24 theoretical hours/6 practical hours/60 self-study hours).

Summary of subject content: The module will equip students with basic knowledge about the growth and development of forest stands and forest production; forecasts for

forest growth, growth and production. Specifically, the module includes 4 knowledge contents: Growth of individual trees and stands; unit division of yield prediction; prediction of growth and yield; and experimental design, data collection and processing for growth and yield studies.

#### **60. Agro-Forest Extension - 2 credits**

Time of study: 2 credits (30 theoretical hours/0 practical hours/60 self-study hours).

Summary of subject content: The module of Agro-Forest Extension **aims** to contribute to the training of agricultural and forestry extension workers with the necessary qualifications and qualities to serve the cause of industrialization and modernization of agriculture and rural areas; provide basic skills on approaches and methods of agricultural and forestry extension, training organization, technology development and management of the above activities. The skills of communicating, promoting and encouraging people's participation in agricultural and forestry extension activities are very important contents and requirements of the lecture.

#### **61. Environmental Impact Assessment - 2 credits**

Time of study: 2 credits (24 theoretical hours/6 discussion hours/60 self-study hours).

Summary of subject content: The module will equip students with in-depth knowledge in the field of Forest Resource Management about environmental impacts and skills to manage and assess environmental impacts according to modern development trends, in order to prevent recession caused by environmental pollution, from that doing well in environmental management in order to harmonize economic, social and environmental development for sustainable development.

#### **62. Business Administration - 2 credits**

Time of study: 2 credits (24 theoretical hours/6 practical hours/60 self-study hours).

Summary of subject content: The module will equip students with an understanding of the concepts and types of businesses in Vietnam and the procedures and sequences for establishing a business....; knowledge of business administration; knowledge of organization, management and evaluation of efficiency in the use of factors of production

in enterprises and planning for project management of Agriculture and Forestry. Help students explain the concepts of enterprise, business; list and describe the steps and sequence of enterprise creation; name and distinguish types of enterprises; apply management knowledge in discussions; understand and explain the roles, characteristics and criteria of factors of production; know how to plan, organize and manage projects.

### **63. Eco – Tourism - 2 credits**

Time of study: 2 credits (24 theoretical hours/6 practical hours/60 self-study hours).

Summary of subject content: The module will equip students with basic knowledge about ecotourism and management of ecotourism projects in tourist areas, conservation areas, and national parks.

The module will equip students with methods and skills to be able to participate in the development of plannings, management plans, development of ecotourism, working in tourist areas, conservation areas, and national parks.

### **64. Forest Environmental Service - 2 credits**

Time of study: 2 credits (24 theoretical hours/6 practical hours/60 self-study hours).

Summary of subject content: The module will equip students with basic knowledge about the role of forests in providing forest environmental services, the meaning of forest valuation and methods of identifying/valuing forests according to forest function and forest status as a basis for the payment of forest services to achieve the best effect in sustainable forest management, protection and development in terms of both socio-economic and environmental aspects. Apply and use proficiently Vietnam's current forest valuation methods by function and type of forest status.

### **65. Forest Economics - 2 credits**

Time of study: 2 credits (24 theoretical hours/6 discussion hours/60 self-study hours).

Summary of subject content: The module will equip students with knowledge about an overview of the forest economy in general, the current status of Vietnam's forests in particular; state management of forestry, forestry management system, organizational

structure of the forestry sector. Present and analyze what the market for forest products is; how to sell them for high profit and finally how to manage forests sustainably.

#### **66. Informative Technology for Forest Resource Management - 2 credits**

Time of study: 2 credits (14 theoretical hours/16 practical hours/60 self-study hours).

Summary of subject content: Provide basic GIS concepts about: What is GIS?, GIS components, databases, GIS features, GIS softwares; history of formation and development of GIS in the world; GIS applications in forest resource management. Help students to understand the basic knowledge of Mapinfo software, edit and build some thematic maps and other display applications of **MapInfo**. From there, there are specific actions to strengthen and improve the application of remote sensing materials to solve specific tasks in the field of forest resource management. Understand some other common information technology software used to edit and build thematic maps in forest resource management (Envi, Microstation, Arcview, ArcGIS).

#### **67. Field works 1: Entomology and Pathology – 1 credits**

Time of study: 1 credit (0 theoretical hours/15 practical hours/30 self-study hours).

Summary of subject content: The module will equip students majoring of forestry with some basic knowledge about methods of investigating forest pests and diseases. After completing this module, students can apply the methods of investigating pests and diseases in nurseries and plantations, distinguishing beneficial and harmful insects.

#### **68. Field works 2: Plants – 1 credits**

Time of study: 1 credit (0 theoretical hours/15 practical hours/30 self-study hours).

Summary of subject content: The module will help students in majoring of Forest Resource Management to improve general knowledge and skills in professional activities such as: plant diversity survey, linear survey, plant species identification, standard plots on forest states.

#### **69. Field works 3: Forest Range administrative Professionalism - 1 credits**

Time of study: 1 credit (0 theoretical hours/15 practical hours/30 self-study hours).

Summary of subject content: The module will equip students with methods of handling legal cases, understanding the handling documents based on reality and help

students acquire skills to handle situations in handling violations in the field of forest management and protection.

**70. Practical training 1: Forest seeding produce, Afforestation and Forest care - 2 credits**

Time of study: 2 credits (0 theoretical hours/30 practical hours/60 self-study hours).

Summary of subject content: The module will equip students with knowledge and practical skills in techniques of producing seedlings for planting and taking care of forests, including 6 lessons according to the following contents: Preparation of nursery land; Seed treatment and sowing; nursery care; Making land for afforestation; Planting techniques; Taking care of planted forests.

**73. Practical training 2: Using Information technology to identify satellite's picture and map Establishment – 3 credits**

Time of study: 3 credits (0 theoretical hours/45 practical hours/90 self-study hours).

Summary of subject content: The module will provide an overview and history of satellite image processing techniques, background knowledge, scientific basis and operation process of the information classification process. Students will be able to acquire knowledge of specialized GIS software used to interpret images, build, edit maps, update information and changes of forest resources and applications of remote sensing technology in the practice of forest resource management.

**74. Graduation Thesis – 10 credits**

Time of study: 10 credits (0 theoretical hours/150 practical hours/90 self-study hours).

Summary of subject content: Students carry out research on graduation thesis on specialized topics on measurement, investigation, pests and diseases of forest trees, forest protection and management, land use, agro-forestry...

<b>Rector of TUAf</b>	<b>Dean of FoF</b>

<b>Tran van Dien</b>	<b>Tran Quoc Hung</b>
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