

# Transilvania University of Braşov, Romania

## Study program: Wildlife Management

Faculty: Silviculture and Forest Engineering

Study period: 4 years (bachelor)

1<sup>st</sup> Year

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Mathematics	MATE	5	2	2	-	-

**Course description (Syllabus):** Vectors and linear analytical geometry; Calculus; Linear algebra; Applications.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Biostatistics	BIOS	4	2	-	2	-

**Course description (Syllabus):** The course targets the following main aspects: The introduction in and description of the main statistical indicators; Description of the main theoretical fitting distributions; Correlation analysis; Regression analysis; Analysis of variance (One-way-ANOVA, two –way ANOVA); Sampling designs.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Technical Drawing and Cartography	DTC	4	2	-	2	-

**Course description (Syllabus):** Introduction. Orthogonal projection; International standards of technical drawing; Multiview projection; Axonometric projection; Architectural drawing; Engineering drawing; Cartography. Map projections. Topographic map; Map design.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Forest informatics	INFF	5	2		2	

**Course description (Syllabus):** Knowing the facilities offered by spread sheets program EXCEL and workflow of the program AutoCAD.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Biochemistry	BIOCH	4	2	-	2	-

**Course description (Syllabus):** Physico-chemical characteristics of living matter; Monoglucides. Poliglucides; Simple lipids. Complex lipids; Monoprotids (amino acids). Poliprotids; Heteroproteids; Liposoluble and water-soluble vitamins; Enzymes; Dynamic biochemistry. Metabolism of carbohydrates, lipids, proteins. Biochemical correlations between metabolisms.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Soil Science, with Elements of Geology and Geomorphology	PEGG	5	2	-	2	-

**Course description (Syllabus):** PART I. ELEMENTS OF GEOLOGY: Introduction. Definition of geology, object, purpose, research methods. Earth as a planet. Space position, shape, dimensions, movements. The Earth structure. Litosfera

and terrestrial crust. Age and evolution of the Earth. Elements of dynamic geology. The mineralogical and petrographic composition of the earth's crust. Graphical representation of lithology and geological structures. The morphostructural units of Romania. PART II. ELEMENTS OF GEOMORPHOLOGY: Introduction. Earth crust relief. The genetic factors of the relief. The main types of terrestrial crust relief. Relief of mountain, plateaus and plains. Role of lithology and geological structure in relief modeling. The volcanic relief. Genesis and evolution of Romania's relief. PART III. GENERAL PEDOLOGY: Introduction. Pedology as a science. Subject, purpose, research methods. Formation and general composition of the soil as a system. Formation and composition of soil mineral component. Formation and composition of the organic soil component. Soil chemical properties. Physical and physical-mechanical properties of the soil. Hydrophysical soil aeration and thermal properties.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Academic writing	SA	1	1	-	-	-

**Course description (Syllabus):** structure and contents of academic papers, literature review, using and citing sources of ideas, plagiarism, academic writing, oral presentations.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Forest Soils and Sites	SSFOR	5	2	-	3	-

**Course description (Syllabus):** Classification and characterization of soils in Romania. Ch. 1. Soil classification in Romania. General aspects, basic principles, classification units. Soil classification in other countries. Protisols Cernisols Umbrisols, Cambisols Luvisols . Spodisols . Hidrisols .Histisols FOREST SITES: Forest site as a system. Definition of the site as geotope and ecotope. Components. Fundamental features. Analysis of site components: rock, relief, climate, soil. Basic principles and working method in Romanian forest mapping and typology. Objectives. Working method, preliminary works, fieldwork, office work. The characterization of the main forest sites in Romania. Mountain forest sites (FM). Hills forest sites (FD). Plain forest sites (FC). Forest steppe forest sites (Ss). Forest sites of the Meadow and Danube Delta.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Forest Meteorology and Climatology	METEO	4	2	-	2	-

**Course description (Syllabus):** Introductory elements: The atmosphere Radiation energy Heating and cooling processes at the subjacent surface level, in the active layer and in the air Air movements The atmospheric water. Notions of synoptic meteorology. Climatology's basic issues. Synthesis elements.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Botany	BOT	4	2	-	2	-

**Course description (Syllabus):** Part one – Plants morphology: Chapter I – Vegetal cell; Chapter II – Vegetal tissues; Chapter III – Morfology and anatomy of vegetative plants organs: root, stem, leaf; Chapter IV – Plants reproduction. Part two – Plants systematics (taxonomy): Chapter V – Introduction to taxonomy; Chapter VI – *Procariota: Bacteriophyta* and *Cyanophyta*; Chapter VII – *Eucariota: Chlorophyta, Mycophyta* and *Lichenophyta*; Chapter VIII – *Bryophyta, Pteridophyta, Gymnospermatophyta* and *Angiospermatophyta*.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Topography-geodesy I	TOPO1	4	2	-	2	-

**Course description (Syllabus):** This course introduces fundamental principles for drawing the plans and maps. Topics covered in this course include: Instruments and methods for angles measurement. Instruments and methods for

distances measurement. Instruments and methods for leveling. Principles for topographic survey. Tahimetric traverse method. Geometric leveling traverse method. Areas calculation. Drawing plans and maps

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Dendrology I	DEN1	4	2	-	2	-

**Course description (Syllabus):** Study of woody species (trees and shrubs) from *Ginkgoaceae*, *Pinaceae*, *Taxodiaceae*, *Cupressaceae*, *Taxaceae*, *Ephedraceae*, *Magnoliaceae*, *Ranunculaceae*, *Berberidaceae*, *Fagaceae*, *Betulaceae*, *Ulmaceae* and *Moraceae* families, regarding: taxonomic classification; morphological descriptions; natural range and area of forest cultures; ecological requirements; biological characteristics (for the main tree species).

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Genetics	GEN	5	2	-	1	-

**Course description (Syllabus):** Introduction to genetics - Concepts, scope and importance. Basic genetics – Tree genome, gene expression, gene structure and regulation, cytogenetics. Transmission genetics – Mendelian genetics, transmission and inheritance of chromosomes, extensions to Mendel’s laws, sex determination in forest trees, types of characters. Genetic markers. Population genetics – genetic structure, measurement of genetic variation within and among populations, mating system, inbreeding, mutations, gene flow, genetic drift, selection.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Practical Training I	PDS1	2	60 hours			

**Course description (Syllabus):** Assisted Botanical Practice in the forest ecosystems nearby Brasov. Topography-assisted practice. Meteorology and Forest Climatology - assisted Practice.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
English language I	LES1/LES/2	2	1	-	1	-

**Course description (Syllabus):** Tenses and aspects: verb forms (+spelling); forms and meanings of tenses; forms and meanings of aspects; temporal-aspectual combinations (e.g. past perfect continuous, future in the past etc.) in the affirmative, interrogative, and negative. Passive voice: form and use; Reported speech; Conditional clauses; Revision.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
English language II	LES1/LES/2	2	1	-	1	-

**Course description (Syllabus):** The Noun; The Article; The Genitive; The Adjective; The Preposition; Relative Pronouns; Revision.

## 2<sup>nd</sup> Year

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Game management	FAUNA	6	3	-	3	-

**Course description (Syllabus):** Description of main game species ecology and ethology distribution in Romania and management description of the mountain river fishes and management techniques for increasing river productivity. Knowledge regarding game and fish farming

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Forest Constructions	CONF	5	2	-	-	2

**Course description (Syllabus):** Main issues: Overall composition of buildings. Dimensional design and tolerances. Technical prescriptions and constructions design; Wood; Mineral binders; Natural stone building materials; Concrete with mineral binders; Ceramics; Roofs; Slabs; Walls; Foundations; Construction of forestry interest.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Topography-Geodesy II	TOPO2	3	1	-	1	-

**Course description (Syllabus):** Geodesy – object, references systems, coordinates, ellipsoid reduction of distances and angular observation. Spherical excess. Meridian convergence. Cartographic projection: description and classification. Azimuthal projections. Gauss-Kruger and Stereographic 1970 projection: characteristics Geodetic networks. First order, second-order, third-order, fourth-order triangulation. GNSS networks. Geodetic network adjustment. Topographic and geodetic coordinates transcalculating Global Positioning Systems GNSS: positioning principle, segments. Permanent base stations. Methods of determination using the GNSS technique. Working mode. GNSS errors.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
GIS	GIS	5	1	-	3	1

**Course description (Syllabus):** System. Data and information. Informational system – information system. Geodesy – geodetic data. GIS specifics in relation to other data processing systems. GIS for different fields. Short history of GIS. Data acquisition. GIS functions. Topology. Creating topology in AutoCAD MAP. Digitising plans in AutoCAD MAP. Errors in GIS.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Dendrology II	DEN2	5	2	-	2	-

**Course description (Syllabus):** Forest woody species (trees and shrubs) study from the families: *Juglandaceae*, *Grossulariaceae*, *Rosaceae*, *Cesalpiniaceae*, *Fabaceae*, *Anacardiaceae*, *Simaroubaceae*, *Aceraceae*, *Hippocastanaceae*, *Staphyleaceae*, *Celastraceae*, *Rhamnaceae*, *Loranthaceae*, *Elaeagnaceae*, *Tamaricaceae*, *Salicaceae*, *Cornaceae*, *Tiliaceae*, *Ericaceae*, *Caprifoliaceae*, *Oleaceae*, *Solanaceae*, *Bignoniaceae* and *Scrophulariaceae* regarding: taxonomic classification; morphological descriptions; natural range and area of forest cultures; ecological requirements; biological characteristics (for the main tree species).

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Forest Entomology	ENTO	4	2	-	2	-

**Course description (Syllabus):** External structure of insects. Internal structure and function. Outbreaks of insects. Population dynamics of forest insects. Insect detection and forecast. Prevention and control of insects. Preventive measures. Mechanical, chemical, biological and integrated control. Damaging insects. Insect biology and control: Defoliating insects (*Lepidoptera*, *Coleoptera*); Terminal, shoot, twig and root insects (*Coleoptera*, *Lepidoptera*, *Ensifera*); Phloem boring insects (*Coleoptera*); Wood boring insects (*Coleoptera*, *Lepidoptera*, *Hymenoptera*); Seed and cone insects (*Coleoptera*, *Lepidoptera*); Gall makers (*Hemiptera*, *Hymenoptera*, *Diptera*).

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Afforestations I	ÎMP1	4	2	-	2	-

**Course description (Syllabus):** Fundamentals of seed production; Harvesting, processing and storage of fruits and seeds; Seed testing; Characteristics of seed germination process; Organisation of forest nursery; Soil preparation and plant nutrition; Production of bare-root and container seedlings from seed; Vegetative production of seedlings; Forest seedling cultivation and maintenance. lifting, storage and handling.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Dendrometry I	DENDR1	4	2	-	2	-

**Course description (Syllabus):** The course is concerned with the measurement of the various dimensions of trees, as well as the statistical properties of tree stands. These measurements are used to find, through allometric relations, other tree properties that are harder to measure directly. Topics covered in this course are: Introduction. Theory and mathematical modelling of form and volume of tree bole. Theory of calculation of bole volume and of bole part volume. Theory of tree and its part measurement. Theory of volume measurement.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Forest Ecology	ECOL	4	2	-	2	-

**Course description (Syllabus):** Introduction. Forest ecology. Levels of organization in the living world. Ecological niche and Growing space. Laws of ecology. The living community. The non living environment (i.e. the biotope). Ecological factors with direct action. The non living environment (i.e. the biotope) – cont. Ecological factors with indirect action. The ecosystem / structure, function, dynamics, limits (the ecotone). Cycle of organic matter within the ecosystem. Relationships inside the forest ecosystem. Forest ecosystem dynamics. Regular changes in the living community. Disturbances 11. Structures of the forest ecosystem resulted from disturbances. Developmental stages of the forest ecosystem. Succession. Ecosystem stability. Biological diversity. Natural resources management and biodiversity conservation.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Forest Products I	PROD1	4	2	-	2	-

**Course description (Syllabus):** The course is structured on the following content coordinates: Woody plants – source for raw material for industrial applications; Anatomical constitutive parts of stems and branches; Secondary xylem genesis mechanism; seasonal activity of the cambium reflected in the annual growth rings structure; Wood architecture (morphological and chemical) at sub-microscopic, microscopic and macroscopic levels – interspecies variations; Physical properties of the wood (moisture, density, inflation, deflation), mechanical properties, calorimetric properties and wood burning, acoustic properties; Wood natural durability and its improvement means; Wood sorting; the first step in raw material conversion into products; Products from or with wood participation: sawn timber, veneers, composites and coal.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Silviculture I	SILV1	5	2		2	

**Course description (Syllabus):** The course targets the knowledge of: the extent, role and multiple functions played by the forest; forest structure (phytocoenosis - tree layer, shrub layer, seedling layer, herbal layer, microphytocoenosis - and zooecoenosis); ecosystem processes taking place in the life community of forests (e.g., natural regeneration of forest; completion of establishment phase; growth and increment of trees and stands; development of trees and stands; natural pruning of forest trees; tree differentiation and natural mortality in the forest; succession of forest vegetation).

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Practical Training II	PDS2	3	90 hours			

Dendrology-assisted practice in the neighboring forests of Brasov; Pedology-assisted practice in the neighboring forests of Brasov; Preparing the individual report and supporting the practice of Dendrology – Pedology; Dendrometry-assisted practice in the neighboring forests of Brasov; Data processing from field measurements and individual evaluation of Dendrometry practice; Practice assisted by Forest Entomology in the neighboring forests of Brasov; Assisted practice in the field of forestry construction on construction sites in Brasov.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
General machine lecture	CGM	4	2	-	2	-

**Course description (Syllabus):** Concepts of materials study; Main body parts of mechanical engineering; Metallic joinings: dismountable and undismountable; The mechanical engineering and the exploitation of engines with internal combustion; The dynamics of forestry machines; Engineering and exploitation of machines transmissions.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Mechanics and Strength of Materials	MRMS	4	2	2	-	-

**Course description (Syllabus):** Course objectives: Mechanical modelling of real structures. The analyse and design of structures using strength of materials principles. Main issues: Statics; Equilibrium of rigid bodies; Traction – compression; Torsion; Bending; Displacement evaluation.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
English Language	LES3	2	1	-	1	-

Pedology – English terminology; Dendrology – English terminology; Ecology – English terminology; Botany – English terminology; Fauna – English terminology; Entomology – English terminology; Revision.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
English Language	LES4	2	1	-	1	-

Academic writing as a process: planning and organizing a text; Elements of writing: logical connectors, style; Accuracy in writing; Writing models: abstracts; Writing models: CVs; Writing models: cover letters; Revision.

### 3<sup>rd</sup> Year

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Forest Transports	TRANSP	4	2	-	2	-

**Course description (Syllabus):** The course targets follow the main aspects: In each chapter are analyzed the problems regarding the knowledge of the forest transports; respectively :introduction, planning and design, construction and features, management and maintenance. The aims is to acquire knowledge regarding the design, construction and management of forest roads in Romania that is available to all sectors of the forest industry – both public and private, foresters and land owners, engineers and contractors, as well as students of forest management and forest engineering.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Forest management (I)	AMEN 1	5	2		2	

**Course description (Syllabus):** The course is concerned with the organization, optimization, management and regulation of structural and functional forest under complex tasks of socio-economic environment and forestry household. Topics covered in this course include: notion and general principles, principles, means and possibilities of forest territorial organization, basic criteria in organization and structural-functional management of stands, exploitability, normal production funds.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Silviculture II	SILV2	5	2		1	1

**Course description (Syllabus):** The course aims at presenting three important issues: Natural regeneration of forests (e.g., regeneration under shelter; regeneration on bare land; regeneration in the forest boundary); Tending operations (i.e. classification of tending operations; description of various tending operations: release cutting, cleaning-respacing, thinning, hygiene cutting, artificial pruning, removal of epicormic branches, tending of forest boundary. The effect and intensity of tending operations); Regeneration methods and silvicultural systems (e.g., terminology, classification of regeneration methods and silvicultural systems; description of main silvicultural systems: clear-felling, strip felling, uniform shelterwood system, group shelterwood system, selection system, irregular shelterwood system, low coppice, pollarding, coppice-with-standards; selection of regeneration method and choice of silvicultural system; special conservation fellings).

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Wood Exploitation I	EXPL1	5	2		2	

**Course description (Syllabus):** The course targets the knowledge of: objectives of trees extraction; harvesting operations: felling, bucking, topping and debranching; logging operations; landing area operations: sorting, bucking, splitting, chipping, debarcking; Wood transportation.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Zoology I	ZOO I	5	2	-	2	-

**Course description (Syllabus):** The course starts with the description of the animal cell, fecundation and embryogenesis, division types, tissue types and continues with organs and organ systems met in recent animals with a special view on animal evolution. **Course Objectives:** The course aims to familiarize the students with the scientific terms of zoology, the types of morphology, tissues, organs and organ systems developed in recent animals.

**Main issues:** The animal cell and its constituents; The types of cell division; Fecundation and embryogenesis; Tissues: Epithels, conjunctive tissues, muscles, nervous tissue; The epidermal system; The skeleton system; The locomotion system; The metabolic system (nutrition, respiration, vascular system, excretion, secretion); The nervous system and the senses; The reproduction.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Vertebrate Anatomy	ANAT	3	2	-	1	-

**Course description (Syllabus):** Bony and arthrology system; Muscular system; Digestive system; Respiratory system; Genital and urinary system; Circulatory system; Nervous system; Analyse system.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Etology	ETOL	3	2	-	1	

**Course description (Syllabus):** The study of animal behaviour for main game species and mountain river fishes in order to be able to take the best managerial measures for population conservation.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Forest Economy and Forest Management	MECFOR	4	2	2	-	-

**Course description (Syllabus):** The basics of forest economy and forest management. Forecast, planning, and organisation in the forest sector. Decision (in certain and uncertain conditions, and risk). Leadership. Human resources management. Particularities of the forest sector. The business environment. The Markets. Forestry marketing. Business strategies in the forest sector. Business plan. Organisational behaviour. Social responsibility. Assessment and control. Quality assurance. Entrepreneurship. Concepts. The entrepreneurial company. Entrepreneurial strategies.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Hunting areas management I	AFV1	5	2	-	2	-

**Course description (Syllabus):** The importance of planning the hunting and fishing. Planning concepts; Current situation and bases spatial arrangement of hunting and fishing; The role of geographical factors, ecological, biotic and anthropogenic planning of hunting and fishing; Influence of agriculture and animal husbandry activities in the hunting arrangement; Impacts of tourism and industrial in settings the hunting forestry; Fitting the hunting of the plains; Fitting the hunting of the hill; Fitting the hunting of mountains; The hunting arrangement according to the main species.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Zoology II	ZOO II	4	2	-	2	-

**Course description (Syllabus):** The course presents the main branches and classes of animals with respect to their morphological and anatomical aspects. **Course objectives:** The students will be able to summarize the main characteristics of the most important animal classes; They will recognize related taxons by similarities and the way the same organs changed by evolution. Main issues: Bird recognition in field work; Bird distribution and habitat preferences; Bird nutrition; Bird reproduction; Bird number; Bird status and protection.

Course title	Code	No. of credits	Number of hours
Practical Training III	PSS3	3	90

**Course description (Syllabus):** Hunting trails, Drinkers and bathers for hunting; Salting for game; Food and leaf fields Feeders for small game and large game; Game food stores; Game observation and harvesting installations; Huts, hunting lodges; Salmonids, waterfalls and spurs.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Hunting in the world	VANL	2	2	-	-	-

**Course description (Syllabus):** Analysis of hunting systems across the world, knowledge about the game main species methods of hunting across the world and their influence in wildlife conservation.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Agriculture	AGRIC	5	2	-	2	-

**Course description (Syllabus):** Agriculture course has been designed to allow students to develop knowledge and understanding of the interaction between the components of agriculture and the scientific principles that explain the processes that take place when inputs are transformed into outputs. It caters for a diverse range of students and ability levels. It has the facility to challenge students academically as well as providing them with a wide range of practical skills and an awareness of technologies associated with agriculture.



Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
<i>Artificial forest regeneration II (Forest plantations and crops for wildlife)</i>	IMP2	4	2	-	1	1

**Course description (Syllabus):** General considerations on artificial forest regeneration; Species selection and association in forests plantations; Site and soil preparation for plantations; Evaluation of plantation succes rate and required maintenance;The main tree species used for wildlife feeding and habitat; Crops for wildlife.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Wildlife and habitat conservation	CONSF	3	2	-	1	-

**Course description (Syllabus):** This course presents the actual national, European and international context of wildlife and habitats conservation with direct implication on wildlife and hunting unit's management. The organization, institutions, projects and financial sources of wildlife conservation are discussed. There are also presented the main aspects of the EU Directives, international conventions and the most important national laws of the game and wildlife management and protected areas.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Limnology and ichthyology	LIMNO	4	2	-	2	-

**Course description (Syllabus):** The course is concerning about ecological knowledge of freshwaters of fish interest, in terms of physical, chemical and biological characteristics, as well as the categories of vegetal and animal organisms that populate these waters. There are learning elements related to study morphology, anatomy, and systematics main fish species in freshwater rivers and lakes in Romania. Also they will learn knowledge about the biology, feeding, breeding, geographical distribution and important of fish species presented.

#### 4<sup>th</sup> Year

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Game farming	CIVAN	4	2		2	

**Course description (Syllabus):** The course is concerning about ecological knowledge of the game species which are subject of farming (mammals and birds), knowledge regarding specific methods and technics for this field of activity and necessary equipments in the farms. There are studied farms for birds (pheasants, partridges, ducks, bustards ea.) and mammals (wild boar, hares, mink, nutria ea.).

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Ornithology	ORNITO	4	2	-	2	-

**Course description (Syllabus):** The course presents general items concerning morphology, anatomy and biology with a special view on nutrition, reproduction and status of birds of hunting interest, including both species of direct hunting interest as well as predators, food concurrents and monitoring species.

**Course Objectives:** The students ought to recognize the species of hunting interest, and have the basic information concerning their biology, etohlogy and management. Main issues: Morphological description of birds; The tegument and its formations; The skeleton of birds; The locomotion system and locomotion types in birds; The metabolic, nervous and reproductive system in birds; Bird migration and bird protection; Bird species of hunting interest (Podicipediformes, Pelecaniformes, Ciconiiformes, Anseriformes, Falconiformes, Galliformes, Gruiformes, Charadriiformes, Columbiformes, Strigiformes and Passeriformes – Corvidae);

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Wild fauna's Pathology	PATOL	4	2	-	1	-

**Course description (Syllabus):** Epidemiological elements; Ethopathology elements; Wild fauna's pathology; Viral disease; Bacterian disease; Prionics disease; Parasitosis disease; Toxicology disease.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Wildlife management I	MCS I	4	2	-	2	-

**Course description (Syllabus):** The management course is describing the evolution of management concept, main factors influencing wildlife management and population dynamic. Also ecosystem management in order to improve necessary condition for wildlife breeding and shelter offer.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Hunting areas management II	AFV2	5	2	-	-	2

**Course description (Syllabus):** Diagnostic key ecological land partridge and pheasant; Diagnostic key ecological land fallow and roe deer; Diagnostic key ecological land boar; Diagnostic key ecological land rabbit; Diagnostic key ecological land deer and bear; Diagnostic key ecological land chamois and hazel grouse; Diagnostic key ecological land wolf, lynx and wild cat; Score limits, categories of reliability and optimal effect; Landscaping of parks and wildlife reserves; Arrangements salmonid mountain water courses and water accumulations in mountain areas;

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Trouts farming	SALMON	5	2	-	2	-

**Course description (Syllabus):** This course contains the main issues of the mountain river ecosystems, trout and other fish species from mountain rivers and lakes (morphology, spreading, habitat, biology and ecology) trout rearing farms and the trout rearing technology.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Hunting law and legislation	DLCIN	4	2	-	2	-

**Course description (Syllabus):** Basic information about the modalities by which are created the regulations in Romania; Basic information about the property right; The normative system in force for game in Romania; The legal tasks and skills of the people involved in the Romanian game field.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Hunting and fishing equipment	ECS	4	2	-	2	-

**Course description (Syllabus):** **Hunting Equipment:** History of hunting equipment and salmonicol. The importance of the work hunting equipment. Different hunting weapons systems. description weapons Caliber hunting weapons, with pipes smooth and rifled tubes. Of hunting ammunition. Interior and exterior ballistics hunting weapons. Killing effect of projectile fired from gun hunting. Optical and optoelectronic instruments used in hunting activity. Atrape and Chem. Means of capturing substances game with tranquilizers. Auxiliary equipment for hunting activities. Labor protection in the use of firearms and other hunting equipment utensils. Accidents with firearms. Legislation on arms. **Fishing Equipment** Fishing. Tools and objects used in fishing. Natural and artificial baits. Industrial fishing. Tools, boats. Baits. Equipment. Models of industrial fishing.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Hunting dogs	CHINOL	2	-	-	2	-

**Course description (Syllabus):** Origin and classification of dog breeds. Body parts, body measurements. Dentition and age determination. Breeds of hunting dogs. Growth and maintenance dog. Food, shelter, care during hunting season. Training hunting dogs. Different systems of hunting with dogs.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Wildlife management II	MCS II	4	2	-	1	1

**Course description (Syllabus):** Management techniques in order to improve habitat quality for main game species analysis of ecological requirements and carrying capacity of habitat in order to determine the optimum number from ecological, economical and social point of view

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Game nutrition	NUTRA	4	2	-	2	-

**Course description (Syllabus):** Game Nutrition deals with classification and function of nutrients, deficiency symptoms, digestive processes, characterization of feedstuffs and formulation of diets for domestic and wild animals. In this course, we will consider all aspects of nutrition for domestic and wild animals, from fundamentals of nutrition through feeds and feeding. There will be an exposure to classic ration balancing techniques in wild animals, in addition to the principles of ration formulation by hand methods in domestic animals.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Game trophies	TROF	3	1		2	

**Course description (Syllabus):** Field of study aims knowledge regarding Romanian game species trophies. Deepens sampling stages, processing, preservation and evaluation of trophies for each species of hunting interest.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Data Collection for the Bachelor's Thesis	PEPD	4	60 hours			

**COURSE OBJECTIVE:** The course refers to the collect the data, experiments in laboratories, field visits or use of the equipment necessary for the determinations. The research design established with supervisors is implemented in the field or laboratories and research data is collected.

**Course description (Syllabus):** According to the curriculum, the course main objective is to collect data for the preparation of the bachelor's thesis. All these activities are coordinated by a supervisor, distributed as follows: Consultation of the recommended bibliography and elaboration of a state of art on the topic of the bachelor project; Use of the indicated equipments, according to the research methodology established by the supervisor; Field visit; Carrying out experiments, data collection, determinations in order to collect the data necessary for the elaboration of the bachelor research project.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Drafting the Bachelor's Thesis	EPD	3	60 hours			

**COURSE OBJECTIVE:** The course is based on the elaboration/drafting of researches / topics of interest, following the suggestions made by the professional forestry associations and the potential employers in the forestry field.

**Course description (Syllabus):** According to the curriculum, the course does not involve teaching activities, only individual study hours and other activities whose main objective is to prepare the bachelor's thesis, documentation

and bachelor thesis development. All these activities are coordinated by a supervisor, during tutoring activities, distributed as follows: Establishing the topic, structure and main bibliographic sources of the diploma thesis; Establishing research objectives and data collection methodology; Analysis of the obtained data and processing; Discussion of the data obtained; Data analysis and interpretation; Discussion of conclusions and recommendations; checking the writing of the final version of thesis.

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Wildlife monitoring and remote sensing	MCT	4	3	-	3	-

**Course description (Syllabus):** Study design. Introduction and Objectives Monitoring of habitat conditions; qualitative and quantitative monitoring of vegetation; vegetation monitoring objectives; monitoring the fruiting of vegetation Monitoring of populations of hunting interest Population monitoring

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Hunting Areas Administration	ADMINV	2	1	-	1	-

**Course description (Syllabus):** Course Objectives: To provide knowledge of factors influencing recreation, forms of recreation, organizing tourism activities. Main issues:Choice of territory for tourist facilities. Systematization and tourism planning of hunting funds. Wood species selection and placement of trees and shrubs. Tourism planning of suburban areas.