ROMÂNIA

MINISTERUL EDUCAŢIEI ŞI CERCETĂRII

UNIVERSITATEA DIN CRAIOVA

FACULTATEA DE AGRONOMIE

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PACKAGE OF COURSES

Bachelor study program: SILVICULTURE

This is the package of course of bachelor study program of SILVICULTURE from the University of Craiova/ the Faculty of AGRONOMY/The Department of Agricultural and Forestry Technology

1ST YEAR OF STUDY

MATHEMATHICS

CREDITS: 3
YEAR/SEMESTER: Ist year / Ist semester
HOURS PER WEEK: 1 hour of course, 1 hour of seminar
NUMBER OF WEEKS: 14
COURSE TYPE: fundamental discipline
COURSE OBJECTIVE(S): Determination of lengths, areas and volumes of geometric objects. Solving specific problems of linear programming, such as crop distribution, setting feed ration for animal feed and working technology, based on matrix computing techniques. Knowledge of the fundamental discipline concepts of probability theory, probabilistic computation rules, the main probability schemes, the notion of random variable. Knowledge of the main classical distribution laws. Statistical analysis of the phenomenon. Graphical representation of a statistical series. The distribution of statistical data and graphical representation, the synthesis of data with an indicator representing them, the determination of statistical indicators of populations and samples (for example, indi-cators of the variations and moments).
COURSE CONTENTS: Crowds; Functions; Matrix calculation; Determinants; Vector spaces. Addiction and linear independence; Euclidean spaces. Orthogonal bases; Linear applications. Matrix of linear application; Canonical forms of endomorphism; Biliary forms. Pattern shapes
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S): Exam (answers to exam 60%, final answers to seminar works 40%)

DESCRIPTIVE GEOMETRY AND TECHNICAL DRAWING

CREDITS: 4
YEAR/SEMESTER: Ist year / Ist semester
HOURS PER WEEK: 2 hours course, 2 hours practical works
NUMBER OF WEEKS: 14
COURSE TYPE: fundamnetal discipline (OPU)
COURSE OBJECTIVE(S): The discipline aims at preparing students to acquire knowledge about basics of descriptive geometry useful for further understanding of the concepts of drawing. Descriptive Geometry familiarize students with concepts of dot, line, plane, with their epurele in space and representations of the geometric bodies in space, being the base of the subsequent disciplines of geometric representations and technical drawing. The forming of the skills of future professionals in Forestry for making and interpreting technical drawings, by using rationally and the combination of the geometric design, descriptive geometry and state standards.
COURSE CONTENTS: Object descriptive geometry. Projection systems. The point. Right. Righteous elevational representation. Straight paths. Particular positions of a line to the projection planes. The relative positions of two straight. The plan. Representation elevational plan. Elements of the plan. The determination of the plan. A peculiarity of the plan. The relative positions of the two planes. Position a line to a plane. Visibility treated. The intersection of plane figures. Projections processing methods: Method change planes projection. Method rotation. Method pivotable projection planes. Raising Rabat. Geometry representation. Sections planar polyhedra (the project plan, with some plane). Sections cylindrical-conical planar bodies (the project plan, with some plane). Conducting surfaces of geometric forms. Conducting polyhedra. Conducting bodies cylindrical-conical surfaces. Conducting surfaces of geometric forms. Conducting polyhedra. Conducting bodies cylindrical-conical surfaces. The intersection of geometric forms. General Method for the determination of the line of intersection.
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S): Exam (Final theoretical exam 60%, final practical exam 40%)

INFORMATICS

CREDITS: 4
YEAR/SEMESTER: Ist year / Ist semester
HOURS PER WEEK: 2 hours course, 2 hours practical works
NUMBER OF WEEKS: 14
COURSE TYPE: fundamental discipline
COURSE OBJECTIVE(S): The utilization of electronic computing systems and of the computing publishing programms, knowing of the basic principles for building databases, knowing of how to develop algorithms for automatic processing of forest information, knowing of the orders for building different types of tables for the information bases data, working with tables and tabular calculations specific to forestry and silvical activities.
COURSE CONTENTS:
Windows operating systems – overview Microsoft WORD: Create/save/open /close file; Page Setup: page margins, page sizes, page orientation header and footer options View Print Preview; Move/copy/paste; Select text; Search and replace, move to document; View Document; Header and footer preview - header and footer creation, ruler, toolbars; Insert to file: page numbers; Page breaks/section breaks; Footnotes; Insert and edit a drawing, diagram, object, text box; Text formatting - specifying all formatting attributes; Create lists numbered/ with bullets/hierarchies; Application borders and shadows; Formatting text in columns, specifying TAB positions and leader characters; Insert table, work with tables. Creating drawings: Drawing toolbar; Inserting equations in the document.
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S):
colloquium (answers to final examinations 50%, answers at practical course during semester 50%)

METEOROLOGY AND CLIMATOLOGIE

CREDITS: 5
YEAR/SEMESTER: Ist year / Ist semester
HOURS PER WEEK: 2 hours course, 2 hours practical works
NUMBER OF WEEKS: 14
COURSE TYPE: fundamental discipline
COURSE OBJECTIVE(S): The Presentation, the description and the application of scientific, theoretical and practical basis, specific to physics and their application into the development of environmental technologies and the ones regarding silviculture perspective. Increasing knowledge on specific terms of physics, on the phenomena and laws governing the environment, similarities and differences between them on all the levels of the organization of matter, from a subatomic level to the biosphere. Knowing specific living applications and the recording equipment and research equipment with importance in biophisycs and agricultural meteorology. The discipline aims to explain phenomena, processes, applications and devices according to the main meteorological parameters, characteristic to the environment. Students must explain each process involved in the proper functioning of the living environment (at body level and biosphere) or interpret the evolution of the system based on the evolution of the environmental factors. Establishing effective work programs and well-structured teams.
COURSE CONTENTS:
Matter organisation. Elements of spectroscopy. Contact phenomena between liquid and solid. Molecular transport phenomena. Diffusion and osmosis. Introduction in biological thermodinamoics. The physical structure of the atmosphere. Solar radiation in the atmosphere and the ground. Thermal regime of the soil and air. Condensation and water vapor condensation products. Rain fall. The climate of Romania and of Europe.
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S): Exam (answers to exam 60%, final answers to Laboratory works 40%)

BOTANICS I

CREDITS: 5
YEAR / SEMESTER: Ist year / Ist semester
HOURS PER WEEK: 2 hours of course, 2 hours of practical works
NUMBER OF WEEKS: 14
COURSE TYPE: fundamental discipline
COURSE OBJECTIVE(S): Ability to understand the morphological and structural characteristics of vascular plants, knowledge that will underpin the study of horticultural plants studied at the specializations of the following years of study. The ability to correlate the morphological and structural notions of horticultural plants in the technological process, in order to achieve productive performance results.
COURSE CONTENTS:
Objective and methods of investigation. Botanical subdivisions. Development of botany in the world and in Romania. Plant cytology. Plant histology. Organography. The plant organs. Vegetative and reproductive organs.
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S): Exam (Final theoretical exam 60%, final practical exam 40%)

AGRICULTURE NOTIONS

CREDITS: 3
YEAR / SEMESTER: Ist year / Ist semester
HOURS PER WEEK: 2 hour of course, 1 hor practical works
NUMBER OF WEEKS: 14
COURSE TYPE: fundamental discipline
COURSE OBJECTIVE(S): Getting Students from the first year of study accustomed with the main specialty subjects like Botany, Soil Management, Plant Physiology, Plant management, Vegetables culture, Fruit growing, Viticulture.
COURSE CONTENTS: Vegetal cell, Plant morphology (root, stem, flower, fruit), Plant Physiology, soil formation processes, fertilizers, weeds, main field crops, vegetable crops, seedling nursery, tomato crop, cabbage, egg plant crop, main fruit trees cultures (apple tree, plum tree, quince tree, cherry tree), vine crop, wine production.
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S): colloquium (answers to final examinations 60%, theoretical and practical checking 40%)

ENGLISH LANGUAGE I

CREDITS: 2
YEAR / SEMESTER: Ist year / Ist semester
HOURS PER WEEK: 1 hour of course
NUMBER OF WEEKS: 14
COURSE TYPE: complementary discipline
COURSE OBJECTIVE(S): Improving the ability to understand spoken English and specific vocabulary texts written in English, using a reference material especially designed for students of Silviculture, but also for those who want to learn ESP vocabulary in context. Practice of important vocabulary and grammar practice, tackle four skills, reading, listening, speaking and writing, explain specific vocabulary, and grammar lessons which are thought in detail, with exercises that give students useful practice in this particular area. True or false exercises, gap filling, matching the words with their definition, translations, in context dialogues and lessons with key bolded words are really selected for students to understand and use it correctly. Deepening the main grammar rules of English in a modern way, problematic, requiring students to learn but also to think. Consolidation of skills to dialogue, describe, report. Emphasizing the practical nature of learning, the course is meant to stimulate students' interest in written and spoken language, to improve knowledge and communication in English.

COURSE
CONTENTS: Focus on language: Present Tense Simple/ Continuous, Vocabulary: Silviculture is the branch of Life Sciences that deals with the art, science, technology, and business of growing plants. It also is the study of plants. It includes the cultivation of medicinal plants, fruits, vegetables, nuts, seeds, herbs, sprouts, mushrooms, algae, flowers, seaweeds and non-food crops such as grass and ornamental trees and plants.
LANGUAGE OF INTRUCTION: English
ASSESSMENT METHOD(S): colloquium (answers to final examinations 60%, theoretical and practical checking 40%)

FRENCH LANGUAGE I

CREDITS: 2
YEAR / SEMESTER: Ist year / Ist semester
HOURS PER WEEK: 1 hour of course
NUMBER OF WEEKS: 14
COURSE TYPE: complementary discipline
COURSE OBJECTIVE(S): Improving the ability to understand spoken French and specific vocabulary texts written in French, using a reference material especially designed for students of Silvicultu re, but also for those who want to learn vocabulary
in context. Practice of important Silviculture vocabulary and grammar practice, tackle four skills, reading, listening, speaking and writing, explain specific vocabulary, and grammar lessons which are thought in detail, with exercises that give students useful practice in this particular area. True or false exercises, gap filling, matching the words with their definition, translations, in context dialogues and lessons with key bolded words are really selected for students to understand and use it correctly. Deepening the main grammar rules of French in a modern way, problematic, requiring students to learn but also to think.
Consolidation of skills to dialogue, describe, report. Emphasizing the practical nature of learning, the course is ment to stimulate students' interest in written and spoken language, to improve knowledge and communication in French.
COURSE CONTENTS:
Focus on language, Vocabulary: Landscape. Scale and heterogeneity (incorporating composition, structure, and function). Patch and mosaic. Boundary and edge. Ecotones, ecoclines, and ecotopes. Disturbance and fragmentation. Theory. Application. Research directions.
LANGUAGE OF INTRUCTION: French
ASSESSMENT METHOD(S): colloquium (answers to final examinations 60%, theoretical and practical checking 40%)

EXPERIMENTAL TECHNIQUE

CREDITS: 4
YEAR / SEMESTER: Ist year / Ist semester
HOURS PER WEEK: 2 hours course, 2 hour practical works
NUMBER OF WEEKS: 14
COURSE TYPE: fundamental discipline
COURSE OBJECTIVE(S): To prepare students for establish a field or laboratory experiment. To analyze researching data.
COURSE CONTENTS: Field experience and elements of an experience. Classification experiences; methods of settlement of experiences in the field. Factors influencing production test plot. Works, observations and measurements made in the field of experience. Research conducted in the laboratory. Vegetation in the house. Experience in the horticultural field errors experienced exploitation and interpretation of experimental data. Practical applications of agricultural experimental technique and interpretation of these data Recovery by analysis of variance experiences placed after block method. Recovery and the interpretation of the experimental data by analysis of variance experiences placed after block method. Recovery and the interpretation of the experimental data by analysis of variance

experiences exposed after subdivided parcels method. Krigging the interpolation method using data from the field. Description and use program.
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S): colloquium (answers to final examinations 60%, theoretical and practical checking 40%)

BIOSTATISTICS

CREDITS: 4
YEAR/ SEMESTER: Ist year / Ist semester
HOURS PER WEEK: 2 hours course, 2 hours practical works
NUMBER OF WEEKS: 14
COURSE TYPE: fundamental discipline
COURSE OBJECTIVE(S): Knowledge of the role, importance and pecularities of biostatistics and research in ecology. Knowledge and definingresearch objectives, design and organization of research, main elements of the experiment, research methods and tehniques in ecology. Design and settingup of experiments, data collection, calculus and inference. Evaluation and capitalization of experimental results.
COURSE CONTENTS: Role, importance, objectives and pecularities of statistics in ecology research. Objectives of scientific research in ecology. Design and organization of research in ecology. Descriptive statistics. Probability and distributions. Extraction of samples for analysis. Measurement errors in environmental experiments. Statistical hypothesistesting. Component elements of one experiment. Single andmulti - factor experimental designs. Analysis of variance (ANOVA). Correlations and regressions. Interpretation and use of experimental results in ecology. Statistical softwares.
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S):
colloquium (answers to final examinations 60%, final answers to works and homework 40%)

PHYSICAL EDUCATION I

CREDITS: 1
YEAR/SEMESTER: Ist year / Ist semester
HOURS PER WEEK: 1 hour practical works
NUMBER OF WEEKS: 14
COURSE TYPE: complementary discipline
COURSE OBJECTIVE(S): Discipline aims at forming the theoretical, practical and methodical skills for individual or group practice for a healthy lifestyle; Awareness of students about the role and importance of practicing physical exercise.
COURSE CONTENTS:
Gymnastics: Front and Band Exercises; Gymnastics Aerobics / Fitness; Application trails combined with treadmills; Application paths combined with equilibrium, escalation, climbing exercises; Sports games: basketball; Sports game: football; Bilateral games under similar competition conditions.
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S): A/R (Assessment through practical tests 80%, continuous assessment throughout semester 20%)

GENETICS

CREDITS: 4
YEAR / SEMESTER: Ist year / IInd semester
HOURS PER WEEK: 2 hours of course, 2 hours of practical works
NUMBER OF WEEKS: 14
COURSE TYPE: fundamental discipline
COURSE OBJECTIVE(S):
Understanding the genetic phenomenon characteristic of the silvicultural species for deepening the concepts of genes, chromosomes, heredity, variability and possible use for practical purposes. Understanding mechanisms

of the transmitting hereditary information and genetic recombination as a source of variability to plants. Knowledge, through scientifically substantiated information, of the structure and function of genetic material at the silvicultural species.

COURSE CONTENTS: The evolution of knowledge about the inheritance and variability, Theoretical and practical importance of genetics forest cell and heredity, cytoplasm and its components function genetic, chromosomal types of cell division, karyotype, principles of genetic analysis, laws segregation of genes in forestry species, mechanism cytology segregation of characters, Heredity chained genes, each gene exchange between homologous chromosomes, chromosome maps, the chemical nature and identification of genetic material. Nucleic acids and their role in heredity. Structure and replication of the nucleic acid, the chemical composition and structure of nucleic acids. Biosynthesis biochemical mechanism of replicative nucleic acids encoding biochemical proteins and their role in life processes, genetic code and its features.

LANGUAGE OF INTRUCTION: Romanian

ASSESSMENT METHOD(S):

colloquium (answers to final examinations 60%, final answers to works and homework 40%)

BOTANICS II

CREDITS: 4

YEAR/SEMESTER: Ist year / IInd semester

HOURS PER WEEK: 2 hours course, 2 hour practical works

NUMBER OF WEEKS: 14

COURSE TYPE: fundamental discipline

COURSE OBJECTIVE(S): Studying and recognizing the main vascular plants, assimilating the main methods of plant investigation; Recognition of the main groups of the studied organisms; Differentiation between the main groups of the studied organisms; Knowledge of the ecology of the analyzed species and the presentation of the practical and scientific importance of plants.

COURSE

CONTENTS: Introduction: Definition and object of study; Research methods; Systematic units (taxa); Plant nomenclature; Short history; Classification systems. Regnum Plantae sensu lato: What are plants (Plantae)?; Taxonomic considerations; The diversity of green plants sensu stricto; Phylogeny; Green algae: Charophyta. General characters; The importance of green algae. Regnum Plantae sensu strictissimo: Diversity and classification; Bryophytes - Non-vascular plants; Tracheophytes (Cormobionta, Tracheobionta) - Plantae vasculares: The origin and meaning of tracheophytes evolution; General characters; Systematic. Phyl. Pteridophyta (Ferigi) and Spermatophyta (gimnosperm and angiosperms); General characters, scientific and practical importance. Representatives.

LANGUAGE OF INTRUCTION: Romanian

ASSESSMENT METHOD(S): Exam (Exam answers -60%, final answers to practical laboratory work 20%, periodic testing by practical control exercises -20%)

PEDOLOGY

CREDITS: 4

YEAR/SEMESTER: Ist year / IInd semester

HOURS PER WEEK: 2 hours course, 2 hours practical works

NUMBER OF WEEKS: 14

COURSE TYPE: fundamental discipline

COURSE OBJECTIVE(S): Knowledge of the soil, natural and ecological environment body component of forest ecosystems, the main factor production in forestry. The tasks of forestry experts for the continued growth of the productive potential of soils and to protect them as main components of forest ecosystems. Determination of the areas of the spread of forest soils and other types of soils represents the area of development of forest vegetation, the biota in general.

COURSE CONTENTS: Purpose and Pedology role in the rational use of soil. Tasks forestry workers to protect the country's land; Pedogenesis factors and their role in the formation of the soils: vegetable and animal organisms; Climate; relief; rock; stagnant water and ground; time; human factor;

The formation and composition of the mineral part of the soil formation processes of the mineral part of the

soil (degradation and alteration). The composition of the mineral part of the soil (degradation and alteration of products, their transport and deposition). The formation and composition of the organic portion of soil origin and composition of the ground organic waste. The decomposition of organic residues and the formation of humus. The composition and properties of humic acids. Types of humus and importance of soil humus. Formation The formation and composition of the soil profile of the soil profile, the profile of the soil horizon. Morphological properties of the soil profile. Physical and physico-mechanical properties of soil Soil texture. Textural classes. Soil structure. Types of structure. The physico-mechanical properties of the soil (consistency, plasticity, adhesiveness, and resistance to volume change looks like). Aeration hydro and thermal properties of the soil. The forces involved in retaining and water movement in soil. Indices soil hydro. The forms of water in the soil. The permeability and the capillary rise of water in the soil. The water regime of the soil. The air in the soil. The thermal regime of the soil. The chemical properties of the soil. Soil solution and its importance for plants. Colloidal soil. The forms of retention of the soil. Soil acidity. Soil Classification Romania, Romanian System of Soil Taxonomy (SRTS) -2012.
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S): Exam (answers to exam 60%, final answers to Laboratory works 40%)

TOPOGRAPHY I

CREDITS: 4
YEAR/SEMESTER: Ist year / IInd semester
HOURS PER WEEK: 2 hours course, 1 hour practical works, 1 hour project
NUMBER OF WEEKS: 14
COURSE TYPE: fundamental discipline
COURSE OBJECTIVE(S): The identifcation and the application of the methods, techniques, procedures and tools for the design and optimization of processes in forestry. The execution of the measurement distances and angles; The drawing topographical plans; The Measuring of the differences in level and the calculation of the allowances of the points; The making of the rated plans and the drawing of the level curves; The making of the longitudinal and transverse profiles.
COURSE CONTENTS:
General notions of topography; Units of measurement in topography; The topographic circle and trigonometric functions; Orientations and coordinate axes; Errors in topography; Marking and signaling points; The measurement of the angles and distances; Closed planimetric traverse method; Planimetric traverse method supported over known points; Picking up the details; Intersectionand retrointersection; Drawing up plans; Calculation and detachment of surfaces; Leveling survey; Methods of geometric leveling; Trigonometric leveling; Leveling of the surfaces; Representation of relief. Slope and its importance to forestry.
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S): Exam (exam answers 60%, final answers for workshops 40%)

DENDROLOGY I

CREDITS: 4
YEAR / SEMESTER: Ist year / IInd semester
HOURS PER WEEK: 2 hours of course, 2 hours of practical works
NUMBER OF WEEKS: 14
COURSE TYPE: domain discipline
COURSE OBJECTIVE(S): Substantiation of the sustainable forest management and the implementation of the technical and economical projects regarding thecontrol of the forestry production process. The familiarization of the students with the morphological peculiarities of the wood species, the macroscopic recognition of them and their systematic classification; The knowledge of the biological and ecological attributes and requirements of the wood species, their geographical distribution, the mode of participation in the composition of the forests and their productivity; The knowledge of the cultural, economic and decorative wood species.
COURSE CONTENTS: Links with other disciplines. Scientific bases dendrology. Basic taxonomic and systematic morphological bases, geographical bases, bases physiological and ecological peculiarities of growth, development and propagation of woody plants. Biochemical Features of woody plants. The amount

of woody plants and landscaping forestry. Gymnospermae - Order Coniferales.
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S): Exam (answers to exam 60 %, periodic answers to practical work 20 %, Activities such reports / herbarium, themes 20 %)

BIOCHEMISTRY

CREDITS: 3
YEAR/SEMESTER: Ist year / IInd semester
HOURS PER WEEK: 2 hours course, 2 hours practical works
NUMBER OF WEEKS: 14
COURSE TYPE: fundamental discipline
COURSE OBJECTIVE(S): Describing the scientific, theoretical and practical basis of the major classes of biochemical compounds from plants. Knowing, understanding the concepts, theories and basic methods of the plant biochemistry; their appropriate use in professional communication. Using the modern methods of scientific investigation in the fiel of biochemistry. Using specific biochemistry laboratory methods, techniques and procedures for the qualitative and quantitative determination of the biochemical compounds from plants. Developing correct skills and experimental skills regarding the approach and resolvation of the speciality problems.
COURSE CONTENTS: The composition of living matter. Carbohydrates: General. Monoglucidelor derivatives. Metabolic roles. Oligoglucide natural biochemical role. Lipids: classification, structure, biochemical role. Poliglucide: classification, structure, biochemical role. Complex lipids: classification, structure, biochemical role. Natural Amino Acids: classification structure. Protein amino acids role. Holoproteide: structure, classification, own, biochemical role. Peptide. Heteroproteide: classification, structure, properties. Biochemical role. Vitamins: generalities. Fat-soluble vitamins: structure, role. Soluble Vitamins: classification, structure, biochemical role. Pesudovitamine. Nucleic acids: structure nitrogenous bases. Nucleoside and nucleotide structure, structure polynucleotide chain. Acids DNA and RNA, metabolic role. Enzymes: structure, classification. Types mechanism in enzyme catalysis.
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S):
colloquium (answers to to final examinations 60%, periodical assessment through practical tests 40%)

PRACTICE

CREDITS: 3
YEAR/SEMESTER: Ist year / IInd semester
HOURS PER WEEK: 30 hours practical works
NUMBER OF WEEKS: 3
COURSE TYPE: domain discipline
COURSE OBJECTIVE(S): The purpose of practical training is to form skills and abilities appropriateto the specific activities of silviculture. Acquiring the applied skills of the knowledge obtained at the specialized courses regarding the field identification of the forest types, the recognition and description of the forest species, the field study of some soil properties, knowledge of the equipment used in surveying, how to work with them and the execution of measurements of distances and surfaces.
COURSE CONTENTS: Methods of collecting and preserving forest species to achieve herbaceous plants. Identification of the main morphological types of roots, stems, leaves, flowers and fruits. Soil analysis on the ground: location of the soil profile; Orientation of the soil profile; Execution of the soil profile;The description of the soil profile determining morphological properties: (number, sequence and thickness of horizons, color, texture and structure of horizons, porosity, compactness, neoformations and soil inclusions, appreciation of soil humidity, appreciation of humus content, characterization of plant nutrition status Fertilization of plants grown on nutrient substrates; Presentation of the equipment used in surveying and how to work with them; Surveying of distances and surfaces measurements; Practical knowledge of the fields of activity in silviculture.
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S): colloquium (the practice book and the exam answers 100 %)

ETHICS AND ACADEMIC INTEGRITY

CREDITS: 2
YEAR/SEMESTER: Ist year / IInd semester
HOURS PER WEEK: 1 hour of course
NUMBER OF WEEKS: 14
TYPE OF COURSE: complementary discipline
COURSE OBJECTIVE(S): presenting and explaining the concepts and defining elements of ethics and academic integrity through a quantitative and qualitative analysis of the phenomena specific to this discipline; initiating students in the field of ethics and academic integrity; quantitative and qualitative analysis of phenomena specific to ethics and academic integrity; integrating knowledge acquired in other disciplines in the training system of this master's degree in the development of individual reports and case studies.
COURSE CONTENTS: The legislative framework and ethical standards applicable to professional ethics specific to the academic environment and good conduct in scientific research; Plagiarism, self-plagiarism and other deviations from the norms of good conduct in scientific research, technological development and innovation; Ethics in the teaching process in academia. Ethics in research; conflict of interest. Code of Honor of academic integrity. Instruments of judicial governance of students. Incidents of racial and sexual harassment; Corruption – concept, prevention, fight; The hidden cost of favors - conflict of interest; Transparency – a panacea? Ethical careers; whistleblowers vs. ethics counselors; Professional codes of ethics; Errors, mistakes and sanctions; Ethical issues of teaching one's own discipline; Ethical problems between colleagues, Ethical issues related to money; Confidentiality, Relationship with the client; Code of Ethics and Professional Dentistry of the UCV.
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S): colloquium (answers to exam 60%, evaluation during the semester 40%).

ENGLISH LANGUAGE II

CREDITS: 2
YEAR / SEMESTER: Ist year / IInd semester
HOURS PER WEEK: 1 hour of course
NUMBER OF WEEKS: 14
COURSE TYPE: complementary discipline
COURSE OBJECTIVE(S): Improving the ability to understand spoken English and specific vocabulary texts written in English, using a reference material especially designed for students of Silviculture, but also for those who want to learn ESP vocabulary in context. Practice of important vocabulary and grammar practice, tackle four skills, reading, listening, speaking and writing, explain specific vocabulary, and grammar lessons which are thought in detail, with exercises that give students useful practice in this particular area. True or false exercises, gap filling, matching the words with their definition, translations, in context dialogues and lessons with key bolded words are really selected for students to understand and use it correctly. Deepening the main grammar rules of English in a modern way, problematic, requiring students to learn but also to think. Consolidation of skills to dialogue, describe, report. Emphasizing the practical nature of learning, the course is meant to stimulate students' interest in written and spoken language, to improve knowledge and communication in English.
COURSE CONTENTS:
Focus on language: Present Tense Simple/ Continuous, Vocabulary: Silviculture is the branch of Life Sciences that deals with the art, science, technology, and business of growing plants. It also is the study of plants. It includes the cultivation of medicinal plants, fruits, vegetables, nuts, seeds, herbs, sprouts, mushrooms, algae, flowers, seaweeds and non-food crops such as grass and ornamental trees and plants.
LANGUAGE OF INTRUCTION: English
ASSESSMENT METHOD(S): colloquium (answers to final examinations 60%, theoretical and practical checking 40%)

FRENCH LANGUAGE II

CREDITS: 2
YEAR / SEMESTER: Ist year / IInd semester
HOURS PER WEEK: 1 hour of course
NUMBER OF WEEKS: 14
COURSE TYPE: complementary discipline discipline
COURSE OBJECTIVE(S): Improving the ability to understand spoken French and specific vocabulary texts written in French, using a reference material especially designed for students of Silvicultur e, but also for those who want to learn vocabulary
in context. Practice of important Silviculture vocabulary and grammar practice, tackle four skills, reading, listening, speaking and writing, explain specific vocabulary, and grammar lessons which are thought in detail, with exercises that give students useful practice in this particular area. True or false exercises, gap filling, matching the words with their definition, translations, in context dialogues and lessons with key bolded words are really selected for students to understand and use it correctly. Deepening the main grammar rules of French in a modern way, problematic, requiring students to learn but also to think.
Consolidation of skills to dialogue, describe, report. Emphasizing the practical nature of learning, the course is ment to stimulate students' interest in written and spoken language, to improve knowledge and communication in French.
COURSE CONTENTS:
Focus on language, Vocabulary: Landscape. Scale and heterogeneity (incorporating composition, structure, and function). Patch and mosaic. Boundary and edge. Ecotones, ecoclines, and ecotopes. Disturbance and fragmentation. Theory. Application. Research directions.
LANGUAGE OF INTRUCTION: French
ASSESSMENT METHOD(S): colloquium (answers to final examinations 60%, theoretical and practical checking 40%)

PHYSICAL EDUCATION II

CREDITS: 1
YEAR/SEMESTER: Ist year / IInd semester
HOURS PER WEEK: 1 hour practical works
NUMBER OF WEEKS: 14
COURSE TYPE: complementary discipline COURSE
OBJECTIVE(S): Discipline aims at forming the theoretical, practical and methodical skills for individual or group practice for a healthy lifestyle; Awareness of students about the role and importance of practicing physical exercise.
COURSE CONTENTS:
Gymnastics: Front and Band Exercises; Gymnastics Aerobics / Fitness; Application trails combined with treadmills; Application paths combined with equilibrium, escalation, climbing exercises; Sports games: basketball; Sports game: football; Bilateral games under similar competition conditions.
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S): A/R (Assessment through practical tests 80%, continuous assessment throughout semester 20%)

2ND YEAR OF STUDY

PLANT PHYSIOLOGY

CREDITS: 4
YEAR/SEMESTER: IInd year / Ist semester
HOURS PER WEEK: 2 hours course, 1 hour practical works
NUMBER OF WEEKS: 14
COURSE TYPE: fundamental discipline
COURSE OBJECTIVE(S): The explanation and interpretation of the interrelations between adopted production systems and the environment. Informing students on the way of how physiological processes occur in plant bodies and deciphering essential functioning aspects of the mechanisms of the individual order. Making connections between physiological and physical processes, biochemical processes, in order to gain complete knowledge on the natural phenomena. Knowing the decisive character of the phenomena and processes studied and evidencing, basing on the volume of knowledge studied, the influence of natural and anthropogenic environmental factors on these processes.
COURSE CONTENTS:
Knowledge and interpretation of the physiological processes of plants andacquiring practical skillsfor the ex perimental demonstration of the main vital plant manifestations.
Plant cell physiology. Water exchange between the plant cell and the external environment.
Plant water regime (Absorption, transport and elimination of water by plants). Mineral
Nutrition. Photosynthesis. Synthesis, transport and storage of organic substances in plants. Aerobic respiration and anaerobic respiration. Plant growth and plant development. Plant orientation andgrowth mov ement.
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S): colloquium (answers to final examination 60 %, final answers for workshops 40%)

DENDROMETRY I

CREDITS: 4
YEAR/ SEMESTER: IInd year / Ist semester
HOURS PER WEEK: 2 hours of course, 2 hours of practical works
NUMBER OF WEEKS: 14
COURSE TYPE: domain discipline
COURSE OBJECTIVE(S): The practical activity of biometric measuring and modeling of trees and stands of trees. Knowing the shape of the trees. Learning processes and methods in order to determinate dendrometric elements and the volume of the trees. Substantiation of knowledge reffered to the modeling of the trees structure.
COURSE CONTENTS: Shape spindle shafts. Synthetic indicators spindle shape. Measuring diameters. Measuring heights. Incubating tree down. Incubating tree standing. Wood weight measurement. Measurement shell, crown branches and roots. Modeling the structure stands.
LANGUAGE OF INTRUCTION: Romanian

ASSESSMENT METHOD(S): Exam (answers to exam 60 %, periodic answers to practical work 20 %, Activities such reports / herbarium, themes 20 %)

DENDROLOGY II

CREDITS: 5
YEAR/SEMESTER: IInd year / Ist semester
HOURS PER WEEK: 2 hours course, 2 hours practical works
NUMBER OF WEEKS: 14
COURSE TYPE: domain discipline
COURSE OBJECTIVE(S): The substantiation of sustainable forest management and the implementation of economic and technical projects regarding the control of the forestry production process. Familiarize students with the morphological peculiarities of the wood species, their macroscopic recognition and their systematic classification; Knowing the biological traits and the ecological requirements of the wood species, their geographical distribution, how wood species participate in the composition of forests and their productivity; Knowing the cultural, economic and decorative improtance of the wood species.
COURSE CONTENTS: dendrology Scientific bases. Basic taxonomic and systematic morphological bases, geographical bases, bases physiological and ecological peculiarities of growth, development and propagation of woody plants. biochemical characteristic woody plants. The amount of woody plants and landscap in forestry: Angiospermae - Class Dicotyledonatae
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S): Exam (answers to exam 60 %, periodic answers to practical work 20 %, Activities such reports / herbarium, themes 20 %)

TOPOGRAPHY II

CREDITS: 5
YEAR/SEMESTER: IInd year / Ist semester
HOURS PER WEEK: 2 hours course, 2 hours practical works
NUMBER OF WEEKS: 14
COURSE TYPE: fundamental discipline
COURSE OBJECTIVE(S):
Knowing the topographic methods used in the design, drawing and control of various engineering works. Implementation and / or coordination of sustainable management activities in forestry, wildlife and salmonids using specific techniques and means; argumenting and grounding the methods and processes used. The execution of measuring distances and surfaces; The drawing of the topographical plans; The usage of topographic devices; The reambulation of the plans and maps; The measuring of the differences in level and the calculation of the points allowances; The drawing of the rated plans and the drawing of the level curves; Explanaining the calculation formulas specific to the marking and control works. The presentation of the devices used in engineering topagraphy and how to work with them. Choosing the best solutions according to the specific situations in the field, for tracing and the control of the engineering works.
COURSE CONTENTS:
Object and definition of Forestry Engineering topography; Using topography engineering design, construction and operation of land reclamation works; Measurements and design made topographical plans the reclamation; Leveling the ground; Plotting terraces and roads on slopes; Topography building methods

plotting construction plan a minutiae of forestry construction; Topographic works made to plotting and implementation of forestry construction, civil, industrial and sivicultural; plotting the field way of a communication route; plotting and opening line in forest; general cadastre notions and forestry; preparation topographical plans and cadastral; areas calculate; Rectification boundaries, detachment and separation surfaces.

LANGUAGE OF INTRUCTION: Romanian

ASSESSMENT METHOD(S): Exam (examination answers 60 %, final answers for workshops 40%)

FOREST BUILDING

CREDITS: 5

YEAR/SEMESTER: IInd year / Ist semester

HOURS PER WEEK: 2 hours course, 2 hours project

NUMBER OF WEEKS: 14

COURSE TYPE: domain discipline

COURSE OBJECTIVE(S): Knowing, understanding the concepts, theories and basic methods of the field and area of specialization; their appropriate use in professional communication. Applying some basic principles and methods for solving problems / situations well defined, typical to the field under conditions of qualified assistance. Knowing the functional composition of a building, determining the principal components, the related items to them and the generating causes of the mechanical request states. Highlighting the ways of the reciprocal arrangement between the different types and categories of constructions, the rational design of the enclosures and determining the qualitative characteristics of the timber constructions. Presentating the properties and types of the building materials, structural assemblies, structural types, sizes, constructive solutions.

COURSE CONTENTS: Studies and forest roads. Materials used in the construction of forest roads. Road and forest transport; Geometry forest roads. Fitting curves superstructure infrastructure and forest roads; Works of art; The study road route. Network of forest roads; Getting building technology; Stages of construction; Elements of building physics; Shares in construction; Construction materials; Infrastructure and superstructure construction building structures resistance forestry; Building construction; Civil engineering.

LANGUAGE OF INTRUCTION: Romanian

ASSESSMENT METHOD(S): Exam (examination answers 60 %, final answers for workshops 40%)

TREE'S BREEDING

CREDITS: 4

YEAR/SEMESTER: IInd year / Ist semester

HOURS PER WEEK: 2 hours course, 2 hours practical works

NUMBER OF WEEKS: 14

COURSE TYPE: fundamental discipline

COURSE OBJECTIVE(S): The means to increase production of the planting timber by making very intensive genotypes productive, high-quality and resistant to unfavorable factors. Acquiring knowledge of the biology and reproduction of trees; Knowledge of genetic resources fund that can be used in plant breeding programs; And acquiring the knowledge of the main methods used in the production of new types

of plants (trees); Knowledge and learning important methods of examination of biological material undergo process improvement; Acquiring knowledge and technology organization process improvement and certification of improved biological material.
COURSE CONTENTS: Relations with other sciences discipline. Role in raising trees to improve forest productivity, reproduction trees. Vegetative propagation, the improvement objectives shaft (general objectives, goals special character), and sources of germplasm of genes used to improve the shafts, the shafts methods used for improving the selection - definition forms of selection, selection of forestry applications. Choice trees, the effects of selection, hybridization - principles, objectives, stages, introduction of new species, improving mutations and polyploidy.
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S): colloquium (answers to final examination 60%, final answers of test for practical laboratory work 40%)

PHYSICAL EDUCATION III

CREDITS: 1
YEAR/SEMESTER: IInd year / Ist semester
HOURS PER WEEK: 1 hour practical works
NUMBER OF WEEKS: 14
COURSE TYPE: complementary discipline
COURSE OBJECTIVE(S): Discipline aims at forming the theoretical, practical and methodical skills for individual or group practice for a healthy lifestyle; Awareness of students about the role and importance of practicing physical exercise.
COURSE
CONTENTS: Gymnastics: Front and Band Exercises; Gymnastics Aerobics / Fitness; Application trails combined with treadmills; Application paths combined with equilibrium, escalation, climbing exercises; Sports games: basketball; Sports game: football; Bilateral games under similar competition conditions.
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S): A/R (Assessment through practical tests 80%, continuous assessment throughout semester 20%)

MULTIPLICATION TECHNICS OF WOODY SPECIES

CREDITS: 3
YEAR/SEMESTER: IInd year / Ist semester
HOURS PER WEEK: 2 hours of course, 2 hours of practical works
NUMBER OF WEEKS: 14
COURSE TYPE: specialized discipline
COURSE OBJECTIVE(S): Increasing the knowledge regarding the characteristics of the different componing parts of the forest biocoenosis and the emergence of new possibilities of introduction them into the economical circuit. Knowing and deepening the knowledge of the forest species propagation, theoretical and practical, both by generative way (the seed) and especially by vegetative way (cuttings, layering, in vitro cultures, manual and mechanical grafting, the separation of the bush, suckers, runners, etc.) specific to every forestry species. Identifing different forest species on land. Knowing how to organize a dendrologic

nursery. Knowing the main technological operations necessary to produce different types of forestry species.
COURSE CONTENTS: General terms of production forest species seedlings (seedlings, layering, grafting); Dendrological nursery; Technologies propagation of forest species; Preparing seed for sowing under shelter some large fruit tree species
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S):
colloquium (answers to final examination 60%, final answers to Laboratory works, referrals 40%)

FOREST ENTOMOLOGY

CREDITS: 4
YEAR/SEMESTER: IInd year / IInd semester
HOURS PER WEEK: 2 hours of course, 2 hours of practical works
NUMBER OF WEEKS: 14
COURSE TYPE: domain discipline
COURSE OBJECTIVE(S): The substantiation of the sustainable forest management and the application of protection measures, to improve and increase the productivity of the forest ecosystems. - Lerning students about the morphological and anatomical structure of the main taxones and about the specialized terminology specific to forest entomology; Knowing and explaining the phenomenon based on mass multiplication, the methods of detection, prognosis, prevention and combating harmful insects; Knowing the bio-ecological characteristics of the main species of insects that can cause damage by defoliation, biting the bark, roots, wood, flowers and fruit of the trees.
COURSE CONTENTS: Insects and the forest environment. Morphology, anatomy, physiology, reproduction and ecology of insects. Mass propagation of insects. Prevention of the growth and control of insects harmful in the forest. Systematic insects. The study of harmful insects on the bodies of trees attacked.
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S): Exam (answers at the exam 60 %, Periodic testing of the questions 10%, activities such papers /insect collection 20%)

ECOLOGY AND ENVIRONMENTAL PROTECTION

CREDITS: 3
YEAR/SEMESTER: IInd year / IInd semester
HOURS PER WEEK: 2 hours of course, 1 hour of seminar
NUMBER OF WEEKS: 14
COURSE TYPE: fundamental discipline
COURSE OBJECTIVE(S): Presenting in a form as concise and as accesible as possible to the students the course material regarding the organizational levels, the biotope, the biocenosis, the foundamental states of the ecosystem, the flows of the ecosystems, the factors that affect the circulation of substance in ecosystems, etc. Knowing the influence of the climatic conditions from the cultivation areas on agro-ecosystems, food chains and material resources of the biosphere. The detailed presentation of the main pollution problems beeing the current issue of mankind.
COURSE CONTENTS: Levels of organization of living matter. Ecosystem: meanings of the concept of ecosystem; Biotope. Abiotic factors; biocenosis; Biotic their role in the ecosystem; Cyclic and linear; The

structure of ecosystems; Ground state of the ecosystem; Food chains; Ecological niche; Flows in ecosystems; Components and features of biogeochemical cycles; Types of ecosystems; Ecological homeostasis: heterogeneity; agro; Lanturiri trophic The material resources of the biosphere; Pollution.
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S):
colloquium (answers to final examination 60%, final answers at practical laboratory works 40%)

FOREST PHYTOPATHOLOGY

CREDITS: 5
YEAR / SEMESTER: IInd year / IInd semester
HOURS PER WEEK: 2 hours of course, 2 hours of practical works
NUMBER OF WEEKS: 14
COURSE TYPE: domain discipline
COURSE OBJECTIVE(S): Knowing and studying the diseases of forestry plants, their causal nature and the presentation of various methods to prevent and combat in order to improve and increase the productivity of the forest ecosystems. Knowing and understanding by the students the corect disease symptoms of the forest species and the corect diagnosis and the optimal treatment moments according to the evolutionary cycle of the pathogens, as well as determining the best methods for preventing and combating, with low impact on the environment. Deepening the theoretical knowledge about the process of pathogenesis, the methods of forecasting and warning, and also establishing the damages and losses caused by pathogens. Developing the students' capacity to observe on the forest species the begining of the appearance of the first symptoms produced by the attack of pathogens and insight the extent of the parasiting process based on the evolution of the environmental conditions and the development cycles of the pathogens. Developing the sense of responsibility regarding the activity protection of the forest species, protecting the environment and achieving higher quantities of timber and of good quality per unit area.
COURSE CONTENTS: General notions of the Phytopathology and the of plant diseases; The type of nutrition of pathogens; The origin and evolution of parasitism; Learning parasitic pathogens; Propagation of pathogens; Plant disease resistance, environmental protection measure; General characteristics of viruses and viral plant main forest; General characteristics of mycoplasma; The main mycoplasmosis of forest plants; General characteristics of bacteria; The main bacteriosis of forest plants; General characteristics of phytopathogenic fungi; Tree diseases; Spruce diseases; Pin diseases; Phage diseases; Oak diseases; Diseases birch, poplar and hornbeam; Elm disease, turntable, acacia; Diseases of lime, ash and maple; The environmental protection of plants by plant technology methods, physical, biological and chemical substances environmentally friendly biodegradable.
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S): Exam (Exam answers 60%, final answers to practical works 60%)

MACHINES AND EQUIPMENTS

CREDITS: 4
YEAR / SEMESTER: IInd year / IInd semester
HOURS PER WEEK: 2 hours of course, 2 hours of practical works
NUMBER OF WEEKS: 14
COURSE TYPE: domain discipline

COURSE OBJECTIVE(S): Acquiring and deepening the knowledge reffering to the technique used in forestry activities. The presentation of the main forestry machinery and equipment. The detailed presentation of the main works realized with the technic from forestry.
COURSE CONTENTS: Motor mechanism. A cycle of transformation of thermal energy (caloric) into mechanical energy. The driving mechanism and the mechanism for distribution. Role. Construction. Operation. Gas distribution pie chart. Thermal power plant engines. Role. Fuels used in the operation of heat engines. The fuel mixture. Thermal power plant engines with spark ignition. Construction. Operation. The supply unit of thermal engines with self-ignition. Construction. Operation. Construction and operation of injection pumps and injectors. Lubricating device cooling system. Ignition system. Construction and operation. BE transmissions used in clutches, gearboxes, differentials.
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S):
colloquium (answers to final examination 60%, final answers to Laboratory works, referrals 40%)

REFORESTATION I

CREDITS: 4
YEAR / SEMESTER: IInd year / IInd semester
HOURS PER WEEK: 2 hours of course, 2 hours of practical works
NUMBER OF WEEKS: 14
COURSE TYPE: domain discipline
COURSE OBJECTIVE(S): The peculiarities of the tree fructifications, the processes of collecting, processing, and conservation of the forest seeds, the organization of forest nurseries, obtaining seedlings in the nursery. Learning the techniques of producing, harvesting, processing, storing, transporting, and preparing for sowing the forestry seeds; Knowing the criteria and principles of choosing the terrains for nurseries, organizing nurseries and producing planting material.
COURSE CONTENTS: General on the advisability and necessity of artificial forest regeneration; organization of seed production; fructification particularities of the process of the wood species, prognosis and assessment of fructifications; the collection and processing of fruits, cones and seeds; seed quality control; preservation of the seed; preparing seeds for sowing; choice of land for nurseries, nurseries organization; nursery crops ecology; enhancing soil fertility in nurseries; The generation and vegetative propagation of woody plants in nurseries; care nursery crops; crop seedlings.
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT TYPE: Exam (60% written examination, 40% periodic evaluation)

DENDROMETRY II

CREDITS: 4
YEAR/ SEMESTER: IInd year / IInd semester
HOURS PER WEEK: 2 hours of course, 2 hours of practical works
NUMBER OF WEEKS: 14
COURSE TYPE: domain discipline
COURSE OBJECTIVE(S): Acquiring knowledge on auxological trees and stands. The practical activity of biometrical measuring and modeling of the trees and the stands of trees. Knowing and lerning the methods and procedures of the tree stands cubation. Determining the quality and the volume on and dimensional and

primary shafts on trees and stands of trees. Acquiring knowledge regarding the trees and stands of trees.
COURSE CONTENTS: MEASUREMENT methods of the stand. Sorting stand: quality classification of trees and stands, procedures for determining the volume assortments. Auxometrie Forest: determining the age of trees and stands, determining increases in trees and stands. Auxological trees and stands: regularities growth of trees and stands, developing individual tree growth and development of trees. Forest inventory.
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S): Exam (answers to exam 60%, Periodically testing the 30% control works, such activities subjects / papers / portfolios 10%)

FORESTRY STATIONS

CREDITS: 4
YEAR/ SEMESTER: IInd year / IInd semester
HOURS PER WEEK: 2 hours of course, 2 hours of practical works
NUMBER OF WEEKS: 14
COURSE TYPE: domain discipline
COURSE OBJECTIVE(S): Knowing the components of the forest ecosystem; Knowing the anorganic nature component of the forest as an ecosystem; Knowing and determining the entering routes in the intimate life of the forest by knowing the biotope in order to ensure optimal and lasting functionality of the stability and maximum productivity of the forests. Physical environment or stational forestry environment - the natural framework - condition of existence and part of the forest ecosystems; The resort as a system; the components and their role in defining and characterizing the resort. Forest classification units of the stations; Types of forest resorts from the biogeographic area of Romania; the sub-alpine floor, the mountain floor with spruce forests, the mixed mountain floor , the mountain-piedmont floor with beech, the hilly floor with sessile, beech and sessile-beech, the hilly floor with cvercetes and hill traces, the hilly floor with cvercete and oak, the plain forest, the forest steppe; The station-ecological substantiation of the complex of the silvicultural measures applied in the forest management.
COURSE CONTENTS: Forest classification units of the stations; The name and the formula Station statuses; Diagnosis and describe the resort; Working method in typology and mapping forest station; Resorts mountain forest; Resorts forest hills and plateaus; Lowland forest resorts; Resorts forest steppe; Forest and meadow resorts Danube Delta; Station-ecological substantiation of complex silvicultural measures applied in forest management LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S): Exam (answers to exam 60%, Periodically testing the 30% control works, such activities subjects / papers / portfolios 10%)

PRACTICE

CREDITS: 2
YEAR/ SEMESTER: IInd year / IInd semester
HOURS PER WEEK: 30 hours of practical works
NUMBER OF WEEKS:3
COURSE TYPE: domain discipline
COURSE OBJECTIVE(S): The purpose of practical training is to develop skills and competences appropriate to the activities of the horticulture field. Acquiring the applied skills of the knowledge obtained at the specialized courses, regarding the identification of the horticultural species, their

cultivation, the recognition and control of diseases and pests, the soil microbiology, the harvesting and the preservation of the production.
COURSE
CONTENTS: Identification and control of the main diseases specific to horticultural plants; Identification and pest control of horticultural plants; Soil microbiological analysis; Biological features and culture technology of some floral species; Horticultural crop culture in vitro; Practical knowledge of the fields of activity in horticulture, floricultural plants, fruit trees, vegetables and vine under morphological, structural, multiplication and lifecycle, and practical skills training.
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S): colloquium (the practice book and the exam answers 100 %)

PHYSICAL EDUCATION IV

CREDITS: 1
YEAR/SEMESTER: IInd year / IInd semester
HOURS PER WEEK: 1 hour practical course
NUMBER OF WEEKS: 14
COURSE TYPE: complementary discipline
COURSE OBJECTIVE(S): Discipline aims at forming the theoretical, practical and methodical skills for individual or group practice for a healthy lifestyle; Awareness of students about the role and importance of practicing physical exercise.
COURSE CONTENTS:
Gymnastics: Front and Band Exercises; Gymnastics Aerobics / Fitness; Application trails combined with treadmills; Application paths combined with equilibrium, escalation, climbing exercises; Sports games: basketball; Sports game: football; Bilateral games under similar competition conditions.
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S): A/R (Assessment through practical tests 80%, continuous assessment throughout semester 20%)

3RD YEAR OF STUDY

SYLVICULTURE I

CREDITS: 5
YEAR/SEMESTER: IIIrd year/ Ist semester
HOURS PER WEEK: 2 hours of course, 2 hours of practical works
NUMBER OF WEEKS: 14
COURSE TYPE: domain discipline
COURSE OBIECTIVES: Knowing the components of the forest ecosystem; Knowledge of processes and phenomena taking place in the forest ecosystem; Systematics and distribution of forest vegetation as a result of ecosystem-level processes and interactions with external environmental factors and determinants. The principles used in forestry; national and global forest; functional role of forests and their zoning; Forest community life (definition, structure, organization, general characteristics); forest biocenosis structure

(brush, undergrowth, seedlings, herbaceous blanket, other plant components); zoocenoza timber; Ecosystem-level processes and phenomena: forest regeneration; Solid state constitution; forest growth and development; natural pruning of trees and differentiation; natural elimination and succession of forest vegetation; Systematic Evolution of forests and forest vegetation; forest types; vegetation distribution in Romania.

COURSE CONTENTS: Research Methods in forestry; The principles applied in forestry; The importance and role of forests, their functional zoning; Forest, forest ecosystem; Forest biocenosis structure; Zoocenoza forest. Tree and forest phytocoenosis essential components of the stand; Structural and qualitative characteristics of the stand; General laws on forest ecology; The influence of climate, soil, orographic factors, biotic and human life in the forest; Forest influence on biotic, abiotic and human living environment; Ecosystem-level processes; The succession of forest vegetation; Distribution of forest vegetation; Characterization of natural forest vegetation in Romania; Altitudinal and latitudinal zoning of forest vegetation; Forest typology

LANGUAGE OF INTRUCTION: Romanian

ASSESSMENT METHOD(S): Exam (answers to exam 60%, Periodically testing the 30% control works, such activities subjects / papers / portfolios 10%)

REFORESTATION II

CREDITS: 5

YEAR / SEMESTER: IIIrd year/ Ist semester

HOURS PER WEEK: 2 hours of course, 1 hour of practical works, 1 hour project

NUMBER OF WEEKS: 14

COURSE TYPE: domain discipline

COURSE OBJECTIVE(S): The principles and criteria in choosing the combination of forest crop species, the methods and procedures used in reforestation, substitutions, and improving the recovery of damaged trees.Students will learn the principles and criteria for the selection and combination of species, laying compositions regeneration schemes and devices; Learning technologies training and improvement of soil fertility, installation and maintenance of forest cultures to obtain their solid state.

COURSE CONTENTS: General on the work of afforestation; choosing the combination of the species in forest crops; association and location of forest species: reforestation composition; introduction of the ground and soil preparation for forest crops; installing forest crops by direct sowing, planting, direct butăşiri; care of forest cultures; main culture hardwood and softwood tree species; Forest considerations degraded and low productivity; increase forest productivity; ecological reconstruction of degraded forests of oaks, forests phenomena of intense drying, beech and spruce forest, the trees thereof; forest crop improvement and recovery of the degraded lands; protective forest; forestation Danube Valley and river valleys inland; specialized forest cultures.

LANGUAGE OF INTRUCTION: Romanian

ASSESSMENT TYPE: Exam (answers to exam 60%, Periodically testing the 30% control works, such activities subjects / papers / portfolios 10%)

HUNTING FAUNA

CREDITS: 4

YEAR / SEMESTER: IIIrd year/ Ist semester

HOURS PER WEEK: 2 hours of course, 2 hours of practical works

NUMBER OF WEEKS: 14

COURSE TYPE: domain discipline

COURSE OBJECTIVE(S): The course aimed at acquiring funds management concepts related to hunting, how to prepare a management plan for hunting, hunting exploitation of resources, extent and manner of the

selection vânatului. Another goal is teaching the ballistic both inner and outer, evaluation methods of game and for calculating the optimum achievement of the population, according to the economic value of hunting funds and calculation of harvest rates. The study of animal and bird species, in relation to environmental factors and the methods by which these factors can be directed. Research on the biology, ecology, ethology and management of species of mammals and birds fauna great interest. Research on the reintroduction of extinct species from Romanian fauna. Knowledge management principles hunting funds. Acquiring the necessary knowledge of wildlife management, sustainable in the socio - economic crisis; GPS and GIS use in wildlife management in Romania. GIS thematic map making on distribution of species of wildlife; managing conflicts between human activities and wildlife.

COURSE CONTENTS: Hunting in Romania and hunting in the world; hunting and hunting in our country, Morphology, anatomy, description and classification notions; Animal ecology Notions. Population (structure, size, Natal, dynamic, the operating sphere, etc.); Etology. Mammals notions; Birds; Protection of hunting, disease and pests, pesticides, hunting shelter. Food game, game damage prevention. Reserves hunting, hunting dogs, hunting weapons balli

LANGUAGE OF INTRUCTION: Romanian

ASSESSMENT METHOD(S):

colloquium (answers to final examination 60%, final answers to Laboratory works 40%)

SALMON FAUNA

CREDITS: 4

YEAR/SEMESTER: IIIrd year/ Ist semester

HOURS PER WEEK: 2 hours of course, 2 hours of practical works

NUMBER OF WEEKS: 14

COURSE TYPE: domain discipline

COURSE OBJECTIVE(S): Establish processes of identification, feeding, breeding and improvement desalmonide species in our country. Interpretareafactorilorlimitativi conditioning the growth and development of salmonids. Description and learning methods based on anatomy, biology, reproduction, growth and feeding salmonid waters restocking mountain management and growth of their trout. Interpretation principles and methods used in assessing methods increase salmonid restocking mountain water.

COURSE CONTENTS: Phylogeny and classification of salmonids zoo. Zoning water ihtiofaunistică mountain and foothill areas., The fisheries peculiarities of mountain and foothill areas, Construction and specific arrangements trout, breeding technologies and exploitation of salmonids, improvement of salmonid species, limiting factors in salmonid rearing.

LANGUAGE OF INTRUCTION: Romanian

ASSESSMENT METHOD(S): Exam (answers to exam 60%, Periodically testing the 30% control works, such activities subjects / papers / portfolios 10%)

WOOD EXPLOITATION I

CREDITS: 4

YEAR/SEMESTER: IIIrd year/ Ist semester

HOURS PER WEEK: 2 hours course, 2 hours practical works

NUMBER OF WEEKS: 14

COURSE TYPE: domain discipline
COURSE OBJECTIVE(S): The forest wood resources available locally: definition, classification, identification and harvesting them. Learning the specifics of work in logging, principles and structure of the production process, knowledge of the technological process of timber harvesting.
COURSE CONTENTS: The specific work in logging; operating principles of the wood and the structure of the production process; logging methods; resources of timber for logging; silvicultural requirements on the logging; sorting and processing of the timber top; the
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S): Exam (answers to exam 60%, Periodically testing the 30% control works, such activities subjects / papers / portfolios 10%)

WOOD ARRANGEMENT I

CREDITS: 4
YEAR/SEMESTER: IIIrd year/ Ist semester
HOURS PER WEEK: 2 hours of course, 2 hours of practical works
NUMBER OF WEEKS: 14
COURSE TYPE: domain discipline
COURSE OBJECTIVE(S): Knowledge of structural changes that confronts a forest, organizing, modeling and direction to the state maximum operational effectiveness in relation to the environmental, economic and social. Knowing the general principles of forest planning; Knowledge of the principles, means and methods organ territorial horizon of forests in Romania; Knowledge of the normal production fund. Understanding and determining the concept of exploitability; Normal production model development fund; Theoretical methods fitting.
COURSE CONTENTS: The arrangement design of the system. The general principles of forest planning. Management goals. Forest functions. Territorial organization of forests in Romania in the work of amenajarare. Basic criteria in organizing and managing the functional structure of stands. Characteristics of normal production fund. Modeling the structure of the normal production fund and the landscape planner means of achieving it. ARRANGEMENT methods.
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S): Exam (answers to exam 60%, Periodically testing the 30% control works, such activities subjects / papers / portfolios 10%)

STUDY AND PROCESSING OF WOOD

CREDITS: 4
YEAR/SEMESTER: IIIrd year/ Ist semester
HOURS PER WEEK: 2 hours of course, 2 hours of practical works
NUMBER OF WEEKS: 14
COURSE TYPE: speciality discipline
COURSE OBJECTIVE(S): Knowing the main product of the forest - the wood structure to primary and secondary; quality, anomalies, defects or multiple uses; Knowledge technologies and final primary processing of wood; Knowledge of machines and devices used in the timber industry. Knowledge of equipment and technology for primary wood processing: production of timber and veneers; Knowledge and technology equipment manufacturing laminated blanks (plywood, fiberboard, cell boards, plywood), fibreboard wood shavings plates crowded and ennobling of wooden boards; Knowledge and technologies

furniture manufacturing machinery; Knowledge and technology equipment manufacture of other wooden products (windows, doors, construction, prefabricated, barrels and sports requisites, boats, musical instruments, pencils, matches, school supplies); Creating a portfolio by participating in a team with establishing and respecting individual roles and tasks.

COURSE CONTENTS: Technology of laminated blanks; Technology of wood fiber boards; chipboard manufacturing technology; ennobling of wooden boards technology; Furniture manufacturing technology; General, semi dispensing technology, processing semifinished and prefabricated wood; Processing technology of wood-based materials; Furniture manufacturing technology; Manufacturing technologies and other finished wood: windows, doors, construction; Manufacturing technologies and other finished wooden houses prefabricated barrels sports requisites; Manufacturing technologies and other finished wood: boats, musical instruments, pencils, matches, school supplies.

LANGUAGE OF INTRUCTION: Romanian

ASSESSMENT METHOD(S):

colloquium (answers to final examination 60 %, final answers at practical laboratory works 40 %)

SYLVICULTURE II

CREDITS: 5

YEAR/SEMESTER: IIIrd year/ IInd semester

HOURS PER WEEK: 2 hours of course, 1 hour of practical works, 1 hour project

NUMBER OF WEEKS: 14

COURSE TYPE: domain discipline

COURSE OBIECTIVES: Transmission and deepening of knowledge on forest establishment and methods of producing cultivated forest regeneration; Knowledge work care and management of forest; Knowing regime and treatments, the conservation work, the work of transformation and ecological reconstruction of degraded forest ecosystems; Develop and implement technical and economic projects on forestry production process control. Knowing the ways and methods of production of cultivated forest regeneration; Care and management of forests: papers care and management of forest with systematic (undercuts depresaje, clearing, thinning and maintenance work special character (pruning, work hygiene, edge solid) organization, application, intensity and effectiveness of care work; regime and treatments, classification regimes and treatments; theoretical and treatment application of the regime woods, grove and grove compound; Specialized conservation. Choosing regime and treatment. systems works on the reconstruction of forest ecosystems proper.

COURSE CONTENTS: Forest foundation; Care work required for the production and management of regeneration; Installation works to promote seedling and seedling care; Evaluation of the success and quality of regeneration; Care and forest management; Classification of care work; Technical execution, intensity, frequency, choice of trees to go and work efficiency; Works with special character; Programming and organization of care; Regulations and treatment; Classification and treatment regimes; Specialized preservation; Mode selection and treatment; Systems works on the reconstruction of forest ecosystems; Adopting treatments repair work and replacement of brushes.

LANGUAGE OF INTRUCTION: Romanian

ASSESSMENT METHOD(S): Exam (answers to exam 60%, Periodically testing the 30% control works, such activities subjects / papers / portfolios 10%)

WOOD EXPLOITATION II

CREDITS: 5
YEAR / SEMESTER: IIIrd year/ IInd semester
HOURS PER WEEK: 2 hours of course, 2 hours project
NUMBER OF WEEKS: 14
COURSE TYPE: domain discipline
COURSE OBJECTIVE(S):
Collection, transport and primary processing of forest wood resources. Students will learn the processes for collection and transport equipment, primary wood processing; acquiring the principles, methodology and basic aspects of the organization of logging sites.
COURSE CONTENTS: The process of collecting wood: wood collection with cable installations, wood collection by other means, criteria for choosing the means of collection; Transport technological process of wood; technical and organizational training site logging; primary wood processing, and storage platforms in primary and final sorting centers and pre industrialization.
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT TYPE:
Exam (answers at the exam 60%, final answers at practical laboratory works 40%)

MECHANISATION OF THE WOOD WORKS

CREDITS: 5
YEAR/SEMESTER: IIIrd year/ IInd semester
HOURS PER WEEK: 3 hours of course, 3 hours of practical works
NUMBER OF WEEKS: 14
COURSE TYPE: speciality discipline
COURSE OBJECTIVE(S): Exposure notions regarding: construction tractors and machinery used in forestry; cleaning machines and land cleared of debris wood and stone; land leveling machines; machines for the basic works of the soil; digging machines pits; seedbed preparation machines; sowing machine; planters; machinery and equipment for application of fertilizers and amendments; machinery and equipment for combating diseases and pests; management systems used in forestry machines.
COURSE CONTENTS: Units of conventional and mechanized index; Peculiarities forestry machinery and equipment and energy efficiency index; Studying trends in the construction tractors and machinery used in forestry, control systems and control them; Machines for cleaning land cleared and scrap wood and stone; Machines for land leveling, soil scarification machinery and equipment, machines remove excess water; Cars for development and maintenance of forest roads; Machines for the basic works of soil overthrowing the swath; Machines for the basic works of the soil without overthrowing the swath; Diggers pits; Seedbed preparation machines; Equipment for sowing; Equipment for sowing in Batch, Combined seeding; Planter seedlings; Drives for operating devices planted, watering installations; Machines for maintenance of forest crops; Machinery and equipment for application of fertilizers and amendments.
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S): exam (answers at the exam 60 %, final answers at practical laboratory works 40 %)

WOOD ARRANGEMENT II

CREDITS: 5
YEAR/SEMESTER: IIIrd year/ IInd semester
HOURS PER WEEK: 2 hours of course, 2 hours project
NUMBER OF WEEKS: 14
COURSE TYPE: domain discipline
COURSE OBJECTIVE(S): Knowledge of the structural transformations to which a forest is subjected, its organization and management towards the state of maximum functional effectiveness in relation to ecological, economic and social objectives. Establishing the socio-economic and ecological objectives of forests. Developing the structural model of a forest by establishing management goals defined by the structural characteristics of forests. Knowledge of the methods for determining the possibility of forests and developing harvesting and cultivation plans (for regular forests, garden forests, quasi-garden forests and coppices). Knowledge of how forest management works are carried out in Romania. Drawing up and developing the management project
COURSE CONTENTS: Defining the normal production fund. Setting the forest functions. Establishing the management bases (regime, target composition, exploitability, treatment and cycle). Ways of regulating the wood production process specific to Romanian management. Introduction. Establishing the possibilities in the regular forest through indicative growth. Establishing the possibility according to the age class criterion. The possibility indicator through the process of successive approximations. Determining the possibility according to growth and the size of the production fund. Establishing the possibility in the garden forest. General aspects. Establishing the possibility according to the control method. Determining the possibility in the garden forest of the principality through successive approximations. Determining the possibility of transforming equine and relatively equine stands into gardens through felling. Establishing the possibility in a quasi-gardened forest. Establishing the possibility in a grove. Elaborating management plans. Harvesting plan for the main products. Plan for the care and management of stands. Plan for regeneration works. Plan for transport installations. Plan for forestry constructions. Management measures in stands classified in types I and II of functional categories. Conclusion and entry into force of the management. Content of a forestry management. Approval and entry into force of management projects. Organization and implementation of management works in Romania. General specifications. Implementation of management works. Evidence of the application of the management
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S): Exam (answers to exam 60%, Periodically testing the 30% control works, such activities subjects / papers / portfolios 10%)

PRACTICE

CREDITS: 3
YEAR / SEMESTER: IIIrd year/ IInd semester
HOURS PER WEEK: 30 hours – practical works
NUMBER OF WEEKS: 3
COURSE TYPE: speciality discipline
COURSE OBJECTIVE(S): The practical training aims to apply the theoretical knowledge acquired in specialized courses in the field of silviculture;
COURSE CONTENTS: Practical knowledge of the fields of activity in silviculture
TEACHING LANGUAGE: Romanian
ASSESSMENT METHOD(S): colloquium (examination practice - 100%)

FOTOGRAMETRY

CREDITS: 4
YEAR/SEMESTER: IIIrd year/ IInd semester
HOURS PER WEEK: 2 hours course, 2 hours practical works
NUMBER OF WEEKS: 14
COURSE TYPE: domain discipline
COURSE OBJECTIVES: Knowledge, understanding of the concepts, theories and basic methods of the field and of the specialization area: knowing the terms used in photogrammetry and understanding the relationships between them; knowledge of instruments used in photogrammetry; explaining the formulas and interpreting the results.
TOPICS:Introduction (definition, purpose and development of photogrammetry).Terms and terms used in photogrammetry.Optics used in photogrammetry; Characteristics and constant of the objective;Aberrations of Objectives; shutter; Diaphragm; Light filters.Photochemical process in photographic techniques; Photographic emulsion; Preparation of photographic emulsions; Structure of silver bromide crystals; The chemical nature of the latent image; Spectral sensitization of photographic emulsions.Photographic processing of black and white photographic materials; Photographic processing of color photographic materials; Photographic materials; The physical properties of the image developed.Aerofotografierea; Air photography; Technical conditions to be met by aerofootogrammetric airplanes; Airplane types; Technical specifications.Aerofotogrammetric chambers; Technical conditions to be met by aerofootogrammetric chambers; Criteria ofPhotogrammetric camera attachments; Verification and calibration of aerofotogrammetric chambers; Calibration methods.Aerophotography project; Meteorological and optical-atmospheric conditions of aerophotography; Selection of films and filters for aerial photography.Calculations required for the aerophotography project; Calculation of heights; Calculation of photogram coverage.Calculating the number of bands and the number of photograms; Calculation of band inputs; Calculation of fuel consumption.Laboratory processing of aerial photography results; Conditions to be met by aerial photography.Verification of aerial photography results; Overall assessment of the quality of aerial photography results.
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S): colloquium (answers to final examination 60%, Periodically testing the 30% control works, such activities subjects / papers / portfolios 10%)

REMOTE SENSING AND GIS

CREDITS: 4
YEAR/SEMESTER: IIIrd year/ IInd semester
HOURS PER WEEK: 2 hours course, 2 hours practical works
NUMBER OF WEEKS: 14
COURSE TYPE: domain discipline
COURSE OBJECTIVES: Deepen knowledge of the teledetection-specific terms and associated sciences. Knowledge of remote sensing applications and recording and research equipment of importance in the field and with applications in agriculture. Knowing the phenomena of remote sensing. Recognition of satellite equipment. Studying the remote sensing device. Acquiring the characteristics of solar and non-solar sources. Knowledge of remote sensing data processing systems. Studying remote sensing data interpretation systems. Appropriate use in the professional communication of global positioning concepts. Argumental use of mathematics, physics and specialty concepts, principles and techniques for explaining and interpreting GPS positioning issues. Acquiring skills to interpret measured data using GPS technology. Using computational programs for data processing measured with GPS technology. Assessment of the quality of some methods and procedures in the field of geodetic engineering regarding GPS positioning.
TOPICS: Introduction and fundamental components of a remote sensing system. Electromagnetic radiation. Electromagnetic spectrum. Phenomena of interaction of radiation with the atmosphere. Phenomena of interaction of target radiation. Description and operation of passive sensors and active sensors. Characteristics of remote sensing images. Types of resolutions. Spatial resolution, scale and pixel size. Spectral resolution, radiometric resolution, temporal resolution. Multi-Spectral

Scanning.Characteristics of thermal imaging. Geometrical distortions of images. Description of digital cameras and aerial photography. Microwave Radiation. Radar Radar, Interaction with Target. Radar image distortions. Radar image properties. Airborne radar systems and space systems. The orbits of the satellites. Satellite capture tools. Ground transmission and preprocessing of remote sensing data. Classification of images. Spectral classification. Satellite programs. Overview of GPS. The principle of positioning in the GPS system. The main errors in GPS positioning. Coordinate systems used in GPS technology.GPS measurement methods. Planning and preparing a GPS campaign.GPS receivers. Geodetic networks created by GPS measurements. Coordinate systems used in satellite geodesy. Processing of GPS observations. Romanian Positioning System ROMPOS.European EUREF Reference System.

LANGUAGE OF INTRUCTION: Romanian

ASSESSMENT METHOD(S): colloquium (answers to final examination 60%, Periodically testing the 30% control works, such activities subjects / papers / portfolios 10%)

ARRANGEMENT GREEN AREAS

CREDITS: 3

YEAR/SEMESTER: IIIrd year/ IInd semester

HOURS PER WEEK: 2 hours course, 2 hours practical works

NUMBER OF WEEKS: 14

COURSE TYPE: speciality discipline

COURSE OBJECTIVE(S): The importance and role of green spaces. Design, creation and maintenance of green areas. The proliferation and culture of woody ornamental species. Knowing the importance of the environment and the existence and durability of seedlings. Knowledge propagation technologies in different species of trees and shrubs.

COURSE CONTENTS: Knowledge of the close interdependence of woody vegetation and ecological factors for producing seedlings in nurseries to create green areas for the existence and sustainability in their time. Explaining the relationship between environmental factors and vegetation; multiplication and culture of woody ornamental species; forming in the nursery seedlings, planting and transplantation; The importance and role distribution and systematization of green spaces.

LANGUAGE OF INTRUCTION: Romanian

ASSESSMENT METHOD(S): colloquium (answers to final examination 60%, Periodically testing the 30% control works, such activities subjects / papers / portfolios 10%)

ELECTRICAL USES

YEAR/SEMESTER: IIIrd year/ IInd semester

HOURS PER WEEK: 2 hours course, 2 hours practical works

NUMBER OF WEEKS: 14

COURSE TYPE: speciality discipline

COURSE OBJECTIVE(S): Addressing issues related to the knowledge of general aspects regarding the presentation of the elements necessary to understand the role of electricity in forestry activity, in order to apply modern and efficient technologies in production.

COURSE CONTENTS: Introductory concepts. Generalities regarding the production, transport, distribution and use of electrical energy. Electric lighting. Power receivers; electric motors. General problems in the calculation of electrical installations. Consumers of electrical energy and their connection to the network. Electrical installations for light and power; Transformer stations; Low and medium voltage overhead and underground power lines; Automatic controls in electrical installations; Earthing sockets in electrical installations.

LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S): colloquium (answers to final examination 60%, Periodically testing the 30% control works, such activities subjects / papers / portfolios 10%)

4TH YEAR OF STUDY

TORENT CORRECTION I

CREDITS: 5
YEAR/SEMESTER: IVth year / Ist semester
HOURS PER WEEK: 2 hours of course, 2 hours of practical works
NUMBER OF WEEKS: 14
COURSE TYPE: speciality discipline
COURSE OBJECTIVE(S): Knowledge of methods of design, construction and maintenance of waterworks torrential correction. Knowledge and understanding of the concepts of rain hydraulic, hydrostatic, hydrodynamic, channels, weirs, the current move to the free surface, and the study erosion processes, configurations and watershed.
COURSE CONTENTS: Notions of the hydraulic rain. Hydrostatic. Pressure forces on the flat wall inclined horizontally and vertically. Water pressure and silt. Hydrodynamics. Fundamental discipline problems of hydrodynamics. Classification of liquid movement. Hydrodynamic balance. The general equation of the constant movement of the differential. Bernoulli's Principle. Impact pressure. Concepts of losses of permanent movement. Weirs. Uniform continuous movement. Channel sections hydraulically optimal. Energy issues. Permanent movement gradually varied. Morphology bands rain. Torrent. Flash floods. Phenomena rain. Torrential process. Genesis, development and scale phenomena rains in Romania. Classification bands rain. Water infiltration into the soil. Runoff. The maximum liquid flow rate. Erosion and transportation of sediments. Evolution concerns the classic concept of the modern conception torrents correct spatial planning and complex watershed. Guidelines in Europe. Realities of modern planning concepts materialize watershed.
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S):
colloquium (60 % of examinations final answers, 40% of final answers to workshops)

FOREST PRODUCTS

CREDITS: 5
YEAR / SEMESTER: IVth year / Ist semester
HOURS PER WEEK: 2 hours course, 2 hours practical works
NUMBER OF WEEKS: 14
COURSE TYPE: domain discipline
COURSE OBJECTIVE(S): Increasing knowledge about the characteristics of different parts of the forest biocoenosis and the emergence of new possibilities of introduction into use. Knowing the main technological operations needed to produce different kinds of berries, from the harvesting operation. Factors modifiers forest fruit quality after harvesting. Knowledge of the harvesting of medicinal plants

conditions. Overview of crust structure, physical, technological and mechanical properties of the crust. Knowing ways to capitalize the crust. Creating a portfolio by participating in a team with establishing and respecting individual roles and tasks.
COURSE CONTENTS: Factors modifiers forest fruit quality after harvesting. Knowledge of the harvesting of medicinal plants conditions. Overview of crust structure, physical, technological and mechanical properties of the crust. Knowing ways to capitalize the crust. Creating a portfolio by participating in a team with establishing and respecting individual roles and tasks.
LANGUAGE OF INTRUCTION: Romanian
KNOWLEDGE ASSESMENT: colloquium (answers to final examination 60%, Periodically testing the 30% control works, such activities subjects / papers / portfolios 10%)

FORESTRY TRANSPORTATION

CREDITS: 5
YEAR/SEMESTER: IVth year / Ist semester
HOURS PER WEEK: 2 hours of course, 2 hours of practical works
NUMBER OF WEEKS: 14
COURSE TYPE: speciality discipline
COURSE OBJECTIVE(S): Assimilation by students of specific concepts of transport phenomena in general and the specific characteristics of the transport timber. Approaching transport in terms of timber transport system (vehicle-runway-driver). Skills training, optimizing transport based on the characteristic indices and indicators. Skills Training for the design work carried out self operating units.
COURSE CONTENTS: General considerations on the role, importance and classification of timber transport. Overall classification of transport. Transport in forestry and its features. Classification of forest transport facilities. Transportrurilor importance of forestry. The transport of materials. Road conditions for transport by land or roads with hard covering. The collection of the wood component of the forest transport. Wood collection vehicles (land and air). Paths. Classifications. The infrastructure and superstructure. Characteristic elements of the road in the longitudinal plane. Characteristic elements of the road in the transverse plane. Studies and forest roads. Forest transport network. Forestry transport characteristics. The layout and structure of the network. Geometrical model for relations between clues linking structure of a network of forest roads. Optimal density of forest road network. Mathematical models for optimizing transport. Characteristics of spatial intervals between vehicles. Theory pursuit vehicles. The Pipes. The Forbes. The General Motors.
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S): Exam (60% of the final grade represent the response to the written theoretical questions and 40% of the final grade the answers to practical laboratory questions)

FOREST IMPROVEMENT I

CREDITS: 5
YEAR / SEMESTER: IVth year / Ist semester
HOURS PER WEEK: 2 hours of course, 2 hours of practical works
NUMBER OF WEEKS: 14
COURSE TYPE: speciality discipline
COURSE OBJECTIVE(S): This course presents the processes of land degradation, formulating principles to

improve, shows how underlying improvement actions, are details related to the need and content of complex ameliorative, details are given on the work fitoameliorative preparatory work the soil and land land referred to afforestation. Students will learn the processes of degradation and drought; Determining how to deal with them by means of forestry equipment, in order to improve and for the most efficient recovery of degraded and water deficit. Fighting degradation processes and general problems of drought and land improvement; Solving important issues raised by agricultural and forestry practice in order to improve the radical and lasting soil and climate; The active participation of each student practical classes and involvement in order to establish appropriate measures and works complex reclamation of degraded lands and dry.

COURSE CONTENTS: General concepts, object, purpose amelioration forestry as a branch of forestry activity. Importance and tasks of forest amelioration. Fighting degradation processes and general problems of drought and land improvement. Improving eroded. Upgrade the sand. Wind erosion and its consequences.

LANGUAGE OF INTRUCTION: Romanian

ASSESSMENT METHOD(S): Exam (answers to exam 60%, final answers to seminars 40%)

FOREST ROADS

CREDITS:5

YEAR / SEMESTER: IVth year / Ist semester

HOURS PER WEEK: 2 hours of course, 2 hours project

NUMBER OF WEEKS: 14

COURSE TYPE: speciality discipline

COURSE OBJECTIVE(S): Knowing, understanding the concepts, theories and basic methods of the field and the area of specialization; their appropriate use in professional communication. Applying basic principles and methods for solving problems / situations well defined, typical to the field under qualified assistance. Presenting features, structure, geometry elements, design solutions, planning solutions, construction solutions and exploitation solutions of the forest roads, for preparing the managers or profile investment beneficiaries. Realizing projects for forest roads and buildings.

COURSE CONTENTS: Study and designing forest roads; Materials used in the construction of forest roads and forest transport road vehicles; Geometry forest roads; Fitting curves. Infrastructure and superstructure forest roads; Works of art; The study road route; Network of forest roads; Getting building technology; Stages of construction; Elements of physics; Construction; Shares in construction; Construction materials; Infrastructure and superstructure construction building structures resistance forestry; Building construction; Civil engineering.

LANGUAGE OF INTRUCTION: Romanian

ASSESSMENT METHOD(S): Exam (answers to exam 60%, final answers to Laboratory works 40%)

MANAGEMENT AND FORESTRY ECONOMY

CREDITS: 5

YEAR/SEMESTER: IVth year / Ist semester

HOURS PER WEEK: 2 hours course, 2 hours seminar

NUMBER OF WEEKS: 14

COURSE TYPE: domain discipline

COURSE OBJECTIVE(S): Knowledge of the concepts of market, product, price, distribution, advertising,

etc. Understanding the organization of specific marketing activities, technically and organizationally. Knowledge of concepts related to the economic terms of its organization, its functionality, of the implementation of modern management techniques and methods etc. Explaining concepts specific rural economy: agrarian structure, land capital, operating capital, labor productivity, cost efficiency, etc. Presentation of the report available on the market between resources and production factors, circumstances and decision, policy and strategy, degree of development and resources (financial, human, material).

COURSE CONTENTS: Defining management; And relationship management processes; Operate leading modern management enterprise; Forest object management; Management of resources and production factors; Human Resources Management; Management work processes; Marketing Considerations, Overview of market marketing mix forest.

LANGUAGE OF INTRUCTION: Romanian

ASSESSMENT METHOD(S): Exam - answers to exam 60%, Periodically testing the 30% control works, such activities subjects / papers / portfolios 10%)

TORENT CORRECTION II

CREDITS: 4

YEAR/SEMESTER: IVth year / IInd semester

HOURS PER WEEK: 2 hours course, 2 hours project

NUMBER OF WEEKS: 10

COURSE TYPE: speciality discipline

COURSE OBJECTIVE(S): Knowledge and understanding of phenomena such as river basins of the changes to water courses, knowledge and understanding of elements and measures works to regulate watercourses. Knowledge of methods of design, construction and maintenance of the regularization of water courses - location, size and computation related to each work.

COURSE CONTENTS: The content and particularities of the action of fitting the watershed; A focus on the issue of mountain river basins; Typology, sizing and conjugation location works to watershed; And functional parts of a dam; The main types of transverse hydraulic works; Longitudinal hydraulic works; Regulation works; Measures and installation work on the restoration and preservation of the vegetal cover; Reforestation torrential river. Forests in the watershed; Current guidelines in their management; Fitting watershed component of general action to restore and protect the environment.

LANGUAGE OF INTRUCTION: Romanian

ASSESSMENT METHOD(S): Exam (exam answers 60%, final answers of test for practical laboratory work 40%)

FOREST IMPROVEMENT II

CREDITS: 4

YEAR/SEMESTER: IVth year/ IInd semester

HOURS PER WEEK: 2 hours course, 2 hours practical works

NUMBER OF WEEKS: 10

COURSE TYPE: speciality discipline

COURSE OBJECTIVE(S): This lecture presents the processes of land degradation, formulating principles to improve, shows how underlying improvement actions, are details related to the need and content of

complex ameliorative, details are given on the work fitoameliorative preparatory work the soil and site improvements referred to afforestation land and site improvements referred to afforestation. Students will learn the processes of degradation and genesis of land and degraded land. Research and mapping of degraded lands. General measures to improve degraded land. The active participation of each student classes practical work and involvement for afforestation of degraded land. Learning the main concepts of land împerdeluirea water scarcity.

COURSE CONTENTS: The processes of degradation of land and genesis of degraded lands. Action to improve degraded forest land and improvement principles. Research and mapping of degraded lands. General measures to improve degraded land. Afforestation. Grassing Natural grasslands and improving degraded lands. Prepare soil for afforestation of degraded lands. Soil for afforestation. Planning for afforestation of degraded land. Draining of forest land. Forest crop protection installed in forest management. Technology improvement of degraded forest land. Afforestation water scarcity. Mapping land with water shortages and general measures to improve these lands.

LANGUAGE OF INTRUCTION: Romanian

ASSESSMENT METHOD(S): Exam (exam answers 60%, final answers of test for practical laboratory work and activities such as projects 40%)

AGROFORESTRY ECOSYSTEMS

CREDITS: 3

YEAR / SEMESTER: IVth year/ IInd semester

HOURS PER WEEK: 1 hours course, 1 hour seminar

NUMBER OF WEEKS: 10

COURSE TYPE: speciality discipline

COURSE OBJECTIVE(S): Discipline "AGROFORESTRY ECOSYSTEMS" aims at presenting the forest ecosystem that harmonizes perfectly with the agricultural forest species, and technologies underlying the establishment and maintenance of these types of ecosystems. Also, another secondary objective is to familiarize students with concepts foresters specialized agronomic closely related to the forestry industry.

COURSE CONTENTS: Definitions. general terms, the objectives pursued by applying agroforestry systems, agroforestry systems in sustainable agriculture, the carbon cycle in global warming and the influence of agroforestry systems on biological balance of ecosystems, the influence of agroforestry on the conservation of water resources and their quality biological material recycling in agroforestry systems, management of agricultural and forestry species protection in agroforestry systems management technologies applied in agroforestry systems.

TEACHING LANGUAGE: Romanian

KNOWLEDGE ASSESMENT: colloquium (answers to final examination 60%, final answears to practical laboratory work 40%)

CONSERVATION OF BIODIVERSITY

CREDITS: 5

YEAR/SEMESTER: IVth year/ IInd semester

HOURS PER WEEK: 2 hours of course, 2 hours of practical works

NUMBER OF WEEKS: 10

COURSE TYPE: speciality discipline

COURSE OBJECTIVE(S): Teaching the: biotope, habitat, biocenosis, preservatives ex-situ, in-situ, the amount of biodiversity. Knowing information about chronology, ecology and hierarchical classification of habitats and habitats. Reconigtion by each student of the main plant and animal species characterization Natura 2000 Natura 2000 forest habitats using manual identification Romanian Natura 2000 habitats in practical work. Knowledge of methodologies for identification and classification of Natura 2000 habitats their active participation in the field trip.
COURSE CONTENTS: Notions of the -biological diversity; habitat, biotope, biocenosis, biotopes CORIN; Value of biodiversity; Types of biodiversity; Biogeographical regions - context habitats; The main habitat classification systems; Natura 2000 habitats in Romania; Natura 2000 habitats widely distributed in Romania and the European Union; Romania distinctive habitats; Prepare a sheet for a Community habitat for priority habitat and species Natura 2000.
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S): Exam (60%, regular testing of control works 20%, of forest habitats recognition Natura 2000 forest habitats in the field - 10%, the final answers to practical laboratory work - 10%)

LAW AND LEGAL FOREST

CREDITS: 4
YEAR / SEMESTER: IVth year/ IInd semester
HOURS PER WEEK: 2 hours of course, 2 hours of seminar
NUMBER OF WEEKS: 10
COURSE TYPE: domain discipline
COURSE OBJECTIVE(S): Accumulation and deepening knowledge of applicable legislation forest and its place in the legal system. Knowledge and interpretation of legal norms that regulate main institutions responsible for forestry. Understanding the basics of law in the specific field and application of legal principles in the reasoning of progressive difficulty. Solving practical problems of law by identifying rules that apply to them and their correct interpretation.
COURSE CONTENTS: Describe the legal definition, classification and selection methods, techniques and procedures used in developing strategies and operations, administrative, economic and marketing. Explanation of specific problems administrative, economic and marketing and substantiation methods and solutions to solve them.
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S): Exam (answers to exam 60%, Periodically testing the 30% control works, such activities subjects / papers / portfolios 10%)

FOREST TOURISM AND ECOTOURISM

CREDITS: 3
YEAR / SEMESTER: IVth year/ IInd semester
HOURS PER WEEK: 2 hours of course, 1 hour of seminar
NUMBER OF WEEKS: 10
COURSE TYPE: speciality discipline
COURSE OBJECTIVE(S): The overall objective of the discipline consists of knowing ways of conservation and protection of forests, tourism resources, ecosystems that circumscribe their (decrease removing land

from agricultural and forestry by reducing, removing and recycling), the items of cultural and historical expressing cultural identity; awareness of the role of ecotourism in support of sustainable tourism. Theoretical knowledge and practical: the new concept of sustainable tourism development; responsibilities in tourism development; tourist reception capacity; planning tourism planning, protected areas; legislative and institutional framework; the impact of tourism development on the environment;

COURSE CONTENTS: Concepts of general types of tourism; general types of tourism; general factors impact on tourism; forest tourism and ecotourism, concepts, objective factors.ecotourism and protected areas; sustainable tourism development, responsibilities; tourist reception capacity, the materialization of sustainable development; tourist facilities planning, component of sustainable tourism development; the impact of tourism development on the natural environment; the impact of tourism development on socio-human; the impact of tourism on rural development; the impact of environmental changes on tourism legislative and institutional framework for sustainable development of tourism; development objectives of ecotourism in protected areas of organizational design, development and promotion of ecotourism in protected areas; forms of ecotourism in protected areas

LANGUAGE OF INTRUCTION: Romanian

ASSESSMENT METHOD(S):

colloquium (answers to final examination 60%, final answers to Laboratory works 40%)

PRACTICE FOR THE PREPARATION OF DIPLOMA PROJECT

CREDITS: 3

YEAR / SEMESTER: IVth year/ IInd semester

HOURS PER WEEK: 30 ore

NUMBER OF WEEKS: 4

COURSE TYPE: speciality discipline

COURSE OBJECTIVE(S): Performance of scientific multidisciplinary / interdisciplinary research projects using innovative methods with significant impact on the development of silviculture; Ability of dra wing conclusions and suggesting solutions / recommendations for academic research and practice in silviculture, based on the research studies performed.

COURSE CONTENTS:

Finalisation of Diploma project plan and REFERENCES; Specialty literature reviews based on academic specialty resources recommended by the research supervisor or other sources considered as being relevant by the student; Finalisation and implementation of the research methodology intended for the achievement of objectives; Preparation and drafting of Diploma Project; Presentation of results and conclusions of the research studies.

LANGUAGE OF INTRUCTION: Romanian

ASSESSMENT METHOD(S):

colloquium (thesis presentation and defense - 100%)

MODELING IN FORESTRY

CREDITS: 4

YEAR / SEMESTER: IVth year/ IInd semester

HOURS PER WEEK: 2 hours of course, 2 hours of practical works

NUMBER OF WEEKS: 10
COURSE TYPE: speciality discipline
COURSE OBJECTIVE(S): Substantiation of sustainable management of the forest fund and administration of the information system specific to the forestry sector. Knowledge and improvement of the economic, organizational and social activity in forestry through the use of mathematical reasoning with the help of electronic equipment, based on mathematical modeling.
COURSE CONTENTS: General notions about mathematical modeling. Definition, purpose, connection of modeling with other fields. Classification and evolution of dynamic forest models. New directions in forest modeling Tree growth and stand management models. Models regarding forest regeneration and young stand management. Models regarding climate change. Models from the fields of forest ecology, forest protection, landscape architecture, forest exploitation, road design, etc.
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S): Exam (answers to exam 60%, Periodically testing the 30% control works, such activities subjects / papers / portfolios 10%)

CADASTRY

CREDITS: 4
YEAR / SEMESTER: IVth year/ IInd semester
HOURS PER WEEK: 2 hours of course, 1 hour practical works, 1 hour project
NUMBER OF WEEKS: 10
COURSE TYPE: speciality discipline
COURSE OBJECTIVE(S): Knowledge the land and the need for rational use of; Explaining the ways of reality field research on real estate; Drawing the forms and cadastral records according to legal status; Making responsibly in compliance of all documents cadastral
COURSE CONTENTS: Cadastre: Components of the cadastre; Administrative-territorial division of Romania. Delimitation of territorial-administrative unit; Identifying owners: Operation ID holders; Cadastral plan: General provisions. Cadastral plan overall. Basic cadastral plan; The criteria for division of land after destinations. How land use; Land use categories; Reambularea cadastral plans. Preparing technical project reambulare. Reambularea measurements of angles and distances or angles; Reambularea numerical measurements; Correction borders; Cadastral numbering: numbering cadastral tarlalelor; The numbering of cadastral parcels; Numbering cvartalelor and plots within settlements; Calculation of areas by graphical methods; The calculation by numerical and analytical areas; Cadastral registers: the Register of cadastral parcels; Register alphabetical owners; Cadastral register of owners; Register property bodies; Summary sheet of the cadastral parcels.
LANGUAGE OF INTRUCTION: Romanian
ASSESSMENT METHOD(S): Exam (answers to exam 60%, Periodically testing the 30% control works, such activities subjects / papers / portfolios 10%), project – 100%.