**CATALOGUE OF KNOWLEDGE**

**1. PRACTICAL EDUCATION (PRE 2)**

**2. GENERAL OBJECTIVES:**

The overall objectives of practical education (PRE 2) are:

• obtaining practical skills for professional and general modules and courses,

• organising students' own work and planning their practical training,

• prepare the practical scheme of the diploma work,

• preserving natural and cultural heritage in their work,

**3**. **THE SUBJECT SPECIFIC COMPETENCES:**

During the process of practical education students acquire generic competences as well as the following ones:

• organising and managing appropriate technology production,

• being able to implement promotional and advertising products and services,

• understanding and recognising the harmful effects of substances that pollute the environment,

• analysing natural and social phenomena, identifying and analysing adverse human impacts on the environment,

• planning and organising the production of vegetables, ornamental herbaceous plants and trees with suitable equipment according to the natural conditions and the market needs,

• planning the preparation of materials and labour resources for the construction of built elements in spatial planning

• planning and organising technological processes of building elements in accordance with the plans,

• planning and organising the planting of green elements and planting built elements,

• designing and implementing maintenance of green areas,

• using the elements of legality and principles of horticultural design and composition within the residential, business and other types of premises,

• distinguishing between the basic and special horticultural methods of work used in the horticultural design of the internal, external, commercial, residential and other premises,

• planning and organising the management of sporting and recreational green areas.

**4. OPERATIONAL OBJECTIVES**

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| **INFORMATIVE OBJECTIVES** | **FORMATIVE**  |
| **A horticultural enterprise business management**A student:-explains the importance of marketing information system,- explains the process of market research,- knows different marketing strategies,- identifies the elements of the marketing mix,- explains the importance of each element in the marketing mix,- identifies factors that affect the price of horticultural products and services,- analyses the appropriateness of the use of various tools of marketing communication in horticulture,- distinguishes individual business functions of the company- identifies the specific types of plans,- explains the organisation of production,**Landscape gardening**A student:* understands the need to use different types of plans and drawings,
* explains the procedures for transferring a plan into a place,
* knows the difference between various geodetic works in landscaping,
* - describe the geodetic tools, gadgets and instruments,
* explains the use of geodetic tools,
* describes the type of soil movements,
* knows the difference between the types of built elements in landscaping,
* explains and uses design features of the built elements,
* knows the difference between the materials and labour equipment for construction funds
* compares the types of materials and describes their use
* knows the difference among the graphical displays of building elements
* explains the importance of legislation in the construction of built elements
* lists the standards in the work of built elements
* knows the difference among various technological processes of building elements.
 | A student:*-* draws up a simple market survey for selected horticultural crops and services,- selects the appropriate marketing strategies and develops the elements of the marketing mix for the selected horticultural production (assortment of plants, packaging, sales prices, sales channels and marketing communications),- plans, organises and monitors production of selected horticultural businesses,- draws up plans of care waste and residues in the specific horticultural production,- establishes and maintains the necessary production - technology and cost and sales documentation.A student:* organises and carries out the transfer of the plans in space,
* uses geodetic devices for transferring data from measurement and plans in space,
* manages and implements a geodetic stakeout,
* calculates cubic capacities of earthworks,
* plans and manages earthworks,
* ensure the appropriateness of the choice of built elements,
* determines the necessary quantities of substances and materials for construction,
* selects and identifies appropriate materials and building materials,
* prepares an inventory of materials and construction works,
* complies with legislation in the construction
* manages construction and responds to errors, faults and hazards in the work process
* selects and applies appropriate substrate or cultivates soil in a proper way.
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| **INFORMATIVE OBJECTIVES** | **FORMATIVE OBJECTIVES** |
| * + understands the importance of using the site for greening the built elements,
	+ explains the specificity of the sites for the types of the greening,
	+ describes the characteristics and complexity of the plants for greening,
	+ explains the importance of initial and periodic greening maintenance of the built elements,
	+ understands the importance of the maintenance of the built elements,
	+ differentiates the types of green elements in the arrangements of green areas,
	+ understands the importance and quality of planting materials and knows the characteristics of green elements,
	+ lists the plants that are tolerant to environmental pollution, droughty, sandy, wet and clayey soil,
	+ explains the basic rules of design and composition in the location of plants in space,
	+ describes the preparation of seedlings for planting,
	+ describes the preparation of the site for planting,
	+ explains the procedures for planting green elements,
	+ differentiates among seed mixtures for sowing of different types of lawns,
	+ explains the preparation of sites for seeding or laying turf lawn rolls,
	+ explains the process of seeding the lawn,
	+ explains how to lay lawn rolls,
	+ understands the problems of maintenance of the green elements,
	+ provides the economical maintenance,
	+ takes into account maintenance during the planning of the planting,
	+ knows the difference between the initial and regular maintenance of all elements of green plantings,
	+ lists the adverse environmental impacts on plants,
	+ knows the difference among tools, machines, devices and their usefulness,
	+ knows the difference among the various ways of appropriate care and protection of plants against pests and diseases.
 | * is responsible for the suitability of the site for greening,
* monitors the quality of seedlings and planting materials, organises and manages the greening of built elements,
* organises and plans an appropriate manner of the maintenance with regard to requirements of the plants and the environment,
* provides for the restoration and protection of built elements,
* is responsible for the quality of planting materials,
* organises the use of suitable plants depending on site conditions and inadequate environment,
* takes care of the usable and aesthetic value of the green elements
* organises the planting of different types of green elements (trees, shrubs, herbaceous ornamental plants, rows of trees, hedges, cover crop ..)
* organises and plans a suitable time for sowing lawn
* calculates the required amount of seeds per unit area,
* monitors and manages the process of preparing the land and sowing lawn,
* monitors and manages laying lawn rolls,
* organises and plans maintenance of green elements,
* evaluates the economic effects,
* organises and manages maintenance, measures for all green elements,
* uses machinery an tools for planting and takes care of the green elements,
* organises the process of protecting plants against diseases, pests, cold, wind, and hail.
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| **INFORMATIVE OBJECTIVES** | **FORMATIVE OBJECTIVES** |
| **Horticultural design**A student:- identifies and explains the characteristics of horticultural design in history- analyses the complexity of the fundamental elements in horticultural design- analyses the forms of spatial order**The techniques of working with plants**A student:* analyses the use of decorative plants and other materials, devices, tools for planning, design horticultural visual images of indoor and outdoor residential, commercial and other premises,
* analyses the preservation and maintenance of the quality and supply of decorative plants,
* analyses different materials and techniques in horticultural design indoor and outdoor commercial, residential and other premises,
* analyses the characteristics of commercial, residential and other premises in relation to fashion trends, colours, needs and aspirations of the people, according to the seasonal feature and a variety of materials,
* analyses new information regarding plant layout solutions LNA type of space, fashion trends, seasonal diversity and the needs and aspirations of people,
* analyses the principles and laws of design in setting up plants in space,
* analyses the technical documentation for the production of vegetable planting from idea to installation in indoor (and outdoor) commercial, residential and other types of space.

**Technology of horticultural crops**A student:* analyses the production of horticultural enterprises,
* knows the different approaches to cultivation of different vegetables and

ornamental herbaceous plants,* knows the different modes of supply of vegetables and ornamental herbaceous plants,
* knows the legislation, policies, regulations and standards that define the production of vegetables, ornamental herbaceous plants and trees,

**Planning and organizing recreational and sports facilities**A student:- knows the basic and special equipment and know how to use them,- knows the systems and equipment for watering surfaces, their maintenance and ways of their usage,- knows the characteristics of individual leisure and sports surfaces,- knows and differs plant elements for planting recreational and sports facilities,- identifies maintenance requirements of individual leisure and sports surfaces,- differs grass mixtures for sports and recreational green areas,- knows the work of maintenance of recreational and sports facilities,- knows the conditions for the management of recreational and sporting green areas,- uses plans and regulations of recreational sports facilities,- knows the norms, rules, methods and principles of construction of recreational and sports facilities covered with grass and their placement in space,**Care and maintenance of recreational and sports facilities**A student:* knows the difference between characteristics and particularities of each type of grass and grass mixtures for durable grass surfaces,
* describes the evolution of grasses and their properties in various stages of the growth development,
* understands the needs of different grasses for fertilizers, water, aeration and other growth factors,
* distinguishes between relevant materials (substrates, fertilizers, etc.) for turf,
* knows the difference between the maintenance, care and preparation of the meadows depending on the application,
* understands the basic measures for the protection of plants against diseases and pests, weeds and moss,
* explains the procedures and purposes of aeration, grooving, sandblasting, and trimming edges,
* explains the procedures for reconstruction of damaged turf,
* separates pests of turfgrass (their development and operation mode)
* recognises the signs of shortages and surpluses of the various nutrients in the turf,
* explains the impact of environmental factors on the turf,
* distinguishes between machinery and devices for carrying out the supply measures for cultivated turf.
 | A student:- prepares a horticultural project design for a particular historical period,- organises, plans and creates space in accordance with historical characteristics and principles of horticultural design,- organises, plans and presents the use of the basic elements in horticultural design in residential and business premises,- draws up a project of the fundamental elements of horticultural design, certain principles of legality and horticultural design in residential and business premises,- uses different approaches for creating compositions in horticultural design,- draw up a placement project of various forms of colour combinations and other design elements in the horticultural area.A student:-draws up a project of the use of decorative plants and other materials, devices and tools for horticultural design of indoor and outdoor residential, commercial and other premises,- finds out different solutions and decides for optimal placement of plants and groups of plants in indoor (and outdoor), commercial and residential premises,- organises and manages the preservation and maintenance of the quality and supply of decorative plants in the wholesale and retail,- plans the use of a variety of materials and techniques,- organises the purchase of various materials for the manufacture of various structures and for use of the various work techniques in wholesale and retail,- draws up a project of analysis of characteristics of commercial, residential and other premises in relation to fashion trends, colorus, needs (and aspirations) of the people, and the seasonal characteristics of the materials,- draws up a project for setting up plants in commercial, residential and other premises,- draws up a project of various plants settings in commercial, residential and other space,- analyses different solutions and decides on the optimal layout of plants in commercial, residential and other premises,- prepares technical documentation,- uses ICT technologyA student:- manages the technological process of cultivation of vegetables,- manages the technological process of cultivation of ornamental herbaceous plants,- manages the technological process of woody plants production, - draws up a plan for growing vegetables,- draws up a plan for the production of ornamental herbaceous plants,- draws up a plan for the production of woody plants*A student:*- prepares machinery and materials for the work and uses them safely,- plans and organises the purchase of necessary equipment and raw materials,- prepares the annual work plan and schedules the execution of works in green areas,- prepares the markings and equipment in recreational and sports green areas (flags, goals, lines, etc.).- organises and manages training programmes,- organises and plans the necessary maintenance and operational work, - provides the necessary documentation and permits for the construction of buildings covered with grass.AStudent:* monitors and controls the growth of grasses in recreational and sporting green areas,
* decides on the regular maintenance of permanent grassland,
* decides on the selection and use of fertilizers, pesticides and biocides,
* selects the optimum time for irrigation, fertilization, aeration, and other measures,
* determines the corrective action of degradation,
* draws up a plan of mowing depending on the intended use of recreational and sports green areas,
* decides and is responsible for drafting the terrain and land selection, sowing grass seed and laying green cover, care and maintenance of lawn surfaces and accessories,
* prepares professional principles and conceptual design for the construction and installation of recreational and sporting green areas,
* monitors the health status of turf, diagnoses pests and selects the appropriate care and protection, thereby protecting health and the environment,
* diagnoses physiological disturbances, and proposes appropriate measures,
* prepares and safely uses machines and devices for the supply of turf,
* carries out simple maintenance and minor machines and devices repairs,
* determines, sets up and maintains the location of labels and equipment in recreational and sports green areas.
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**5. OBLIGATIONS OF STUDENTS OR SPECIAL FEATURES IN PERFORMANCE**

Students' liabilities are as follows:

• completion of practical training to the extent of 800 hours,

• fulfillment of the PRE plan and writing PRE reports,

• presentation of the project or seminar papers within the PRE and a defense of a degree.