**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 technology  A 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. |

**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.