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| Discipline | *VEGETABLE PRODUCTION – PART 1* code: 33 winter semester | |
| Specialty | AGRONOMY | |
| ECTS credits: **5** | Form of assessment: Exam | |
| Lecturer | Prof. Hriska Boteva PhD<br>Room NUK 317a<br>Phone: +359 52 385 725<br>E-mail: hriska_mb@abv.bg | |
| Department | PLANT PRODUCTION | |
| Faculty | *FACULTY OF MECHANICAL ENGINEERING AND TECHNOLOGIES* | |

Annotation:
The Vegetable production is an important sector of agriculture in Bulgaria. The great importance of this subsector is determined by the appropriate soil and climatic conditions in the country and the centuries-old traditions built by several generations of gardeners. More than 50 types of vegetable crops are grown and still growning in our country. According to statistical surveys, vegetable production is produced annually on an area of about 150,000 hectares. The pursuit of competitive production in the cultivation of vegetables requires staff with extensive experience in growing vegetables.
Aim of the training: Enriching the student's information on the production directions, the botanical characteristics of the varieties and the modern technologies applied in the sector of vegetable production. In the lecture course, they will have the opportunity to acquire new, theoretical and applied knowledge, which will be subsequently confirmed during the seminar and laboratory exercises. Upon completion of the course, future bachelors will learn the basic theoretical and practical skills needed to organize the successful production of plant products. Students will learn historical experience, contemporary theoretical knowledge and practical approaches to growing vegetables. Understanding the peculiarities and requirements of vegetable crops to the main environmental factors. Engage in techniques to optimize plant growth conditions and constantly master practices that will increase production efficiency. Undertaking the basics of vegetable production is a natural continuation of the basic and specialized disciplines studied at the Bachelor's degree. Upon completion of the training, students will have real chances of realization on the labor market and the best will continue to develop the acquired knowledge in the Master's programs.

CONTENTS:

| Training Area | Hours lectures | Hours seminar exercises |
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| Nature, purpose and tasks of vegetable production. Guidelines for vegetable production. Social and economic importance of vegetables. | 1 | |
| Production directions in vegetable production. Origin of vegetable crops and main areas for their cultivation in the country. | 1 | |
| Botanical classification of vegetable crops. Other types of classifications. | 1 | |
| Requirements of vegetable crops to environmental factors. Requirements to the light, heat, humidity and air-gas mode of the environment. Adjustment options. | 2 | |
| Dietary requirements of vegetable crops. Importance of fertilization. Types of fertilizers. Deadlines and ways of depositing. Means of regulation. | 1 | |
| Requirements of vegetable crops to the soil Selection of suitable areas and systems for soil treatment in vegetable production - types of soil treatments and their importance for plant growth and development, water and nutritional regime and the appearance of weeds. | 2 | |
| Crop rotations in vegetable production - essence and importance. Effect of crop rotations on soil fertility. Kinds. Possibilities for monoculture cultivation, biological tolerance of vegetable crops. | 2 | |
| Water regime requirements. Irrigation of vegetable crops. Classical and modern methods of irrigation. Advantages and disadvantages. Ways to regulate. | 1 | |
| Propagation of vegetable crops. Seed propagation. Cultivation by seedlings and vegetative propagation. Advantages and disadvantages. Types of cultivation facilities. | 2 | |
| Alternative systems for growing vegetable crops. | 1 | |
| Organic vegetable production. Basic Principles. Technologies for biological production. | 1 | |
| Agroclimatic conditions in Bulgaria and zoning of vegetable crops. Specific features of growing vegetables. Critical points in the production of vegetable produce. | | 2 |
| Cultivation facilities for growing vegetable seedlings. Types and features of the microclimate in them. Preliminary preparation of facilities for the production of seedlings. Pre-sowing seed preparation. | | 3 |
| Propagation of vegetable crops. Morphological characters of vegetable seeds. Qualities of vegetable seeds. Determination of germinating energy and germination of seeds. | | 3 |
| Standards for the production of seedlings of vegetable crops. Preparation | | 2 |

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| of areas for the production of vegetable seedlings. Substrates and mixtures used in growing seedlings. | | |
| Seedling production - main technological units. Mixtures and substrates for growing vegetable seedlings. Seedling grafting. Necessary conditions for the production of seedlings. | | 2 |
| Identification of vegetable seeds after germination. Production of dense and prickly seedlings. Timings and technique of picking the seedlings. Modern technologies for the production of seedlings. | | 3 |
| Growing seedlings in cultivation facilities for early and mid-early field production. Light, heat and humidity requirements of vegetable plants in facilities. Basic agrotechnological measures for growing seedlings in cultivation facilities. | | 2 |
| Growing seedlings for late field production. Seedling quality requirements and assessment. Basic agrotechnological measures for growing seedlings. | | 2 |
| Selection of suitable areas for growing vegetable crops. Specific moments of agrotechnics and fertilization. Variations in soil surface profiling. Ways of sowing and planting vegetable crops. | | 2 |
| Crop rotations in vegetable production. Kinds. Development of appropriate crop rotation schemes for growing vegetables. | | 3 |
| The requirements for the water regime and irrigation of vegetable crops. Types of watering. Irrigation and irrigation rate. Interirrigation period. Determining soil moisture and the initial watering period. Irrigation water quality. | | 2 |
| Fertilization of vegetable crops. Physicomechanical properties of fertilizers. Fertilizer rates. Ways and terms of fertilizing. Main differences between fertilizers used for conventional and organic production. | | 2 |
| Appraisal of plants and forecasting of agrotechnical measures, harvests and yields. | | 2 |
| TOTAL: **45 h** | **15** | **30** |