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|--|-------------------------------------|
| <b>1. Course name:</b> Viticulture technologies<br><b>Code:</b>  |                                     |
| <b>2. Qualification, study level:</b> Horticultural engineer BSc   | <b>3. Language:</b> English         |
| <b>4. Course type:</b> obligatory  | <b>5. Evaluation:</b> Practice Mark |
| <b>6. Number of hours per week:</b> 0+4  | <b>7. Credit:</b> 4                 |
| <b>8. Semester:</b> 4  | <b>9. Work schedule:</b> daytime    |
| <b>10. Study prerequisites:</b>  |                                     |
| <b>11. Responsible organization unit:</b> Department of Horticulture   |                                     |
| <b>12. Course leader:</b> Dr. Ferenc Baglyas   |                                     |
| <b>13. Instructor:</b> Dr. Ferenc Baglyas  |                                     |
| <b>14. Short description of the study programme (announced in Neptun)</b><br><b>Aims and objectives of the course (max 5 lines):</b><br>Based on the basic knowledge learnt in the previous semester students learn the viticulture technology that can be used to manage both private farms and integrated vineyards for efficient and productive production.   |                                     |
| <b>Curriculum:</b><br>Vineyard establishment<br>Biology of pruning<br>Trellis systems<br>Canopy management<br>Nutrition, irrigation<br>Plant protection, harvest<br>Grapevine cultivars  |                                     |
| <b>Those students who have the following knowledge, abilities, attitudes, autonomy and responsibility can be awarded a BSc diploma:</b>  |                                     |
| <b>a) knowledge</b><br>Graduates will <ul style="list-style-type: none"> <li>• have comprehensive knowledge of the facts, directions and boundaries of the topics of the given field of training</li> <li>• have knowledge of the most important correlations, theories and the concepts related to their professional field</li> <li>• knows the knowledge acquisition and problem-solving methods of the main theories of their professional field</li> <li>• have the knowledge that is necessary for starting an MSc course of the given (and other) field of training</li> <li>• have comprehensive knowledge of the legal regulations and ethical norms related to their professional field</li> <li>• have the knowledge, abilities and attitudes that relate their profession to specific fields of civic literacy</li> </ul>  |                                     |
| <b>b) abilities</b><br>Graduates <ul style="list-style-type: none"> <li>• can fulfil their tasks related to their qualifications</li> <li>• can perform a basic analysis of the disciplines of their field of research and provide a synthetic definition and adequate assessment of correlations</li> <li>• can employ the procedures of their field of interest as well as the most important theories and the related terminology</li> <li>• understand and use the online and printed literature related to their professional field in Hungarian and foreign language and also have the knowledge of effective information searching and information processing in their professional field</li> <li>• understand and interpret longer texts, as well as texts with visual signs, typography tools and icons, tables, datasets, moving and still pictures, maps and diagrams</li> </ul> |                                     |

- identify routine problems, explore and determine the theoretical and practical background needed for their resolution and solve them using standard procedures
- plan and organize their own independent learning and use the widest range of sources available
- utilize the resources of their workplace effectively using their professional knowledge

**c) attitudes**

Graduates

- accept and represent the social role of their profession and its relationship with the world
- are open to transit and convey the basic characteristics of the comprehensive way of thinking of the professionals in their professional field and the practical mechanisms of their profession
- are open to get acquainted with, accept and convey the technological developments and innovations in their professional field
- make their decision with respect to all laws, regulations and ethical norms even in situations requiring a complex approach
- aim at solving problems in collaboration with others
- develop themselves continuously to serve the public

**d) autonomy and responsibility**

Graduates

- examine comprehensive professional questions thoroughly without help and give an answer to them in unexpected situations on the basis of given resources
- examine comprehensive and special professional questions thoroughly and give an answer to them on the basis of given resources using professional guidance
- carry out their duties independently and critically assess and continuously correct their work
- participate in shaping and justifying professional assumptions
- accept the basic assumptions of their professional field

develop their skills and acquire new competencies (by learning independently or attending further education courses) which make them suitable for responsible positions in a corporation

**15. The system of assessment and evaluation (announced in Neptun)**

**Assignments:**

- Students take two midterm exams in the semester. Supplementation of absence can be done within the term prescribed by the department during the term of study
- Options for supplementation:  
Supplementation of absence can be done within the term prescribed by the department during the term of study. If there is no substitution until the deadline that has expired, replacement can be done only in the semester in which the absence was completed. If the number of absences reaches 30% of the compulsory number, the subject should be repeated.  
Replacement and repair of a midterm exam: during the 12th week of the study period

Grading:

|                 |                         |     |              |                 |
|-----------------|-------------------------|-----|--------------|-----------------|
| Midterm exam 1: | 2 x 25 points=50 points | (5) | excellent    | 86 - 100 points |
| Midterm exam 2: | 50 points               | (4) | good         | 76 - 85 points  |
| Total:          | 100 points              | (3) | satisfactory | 61 - 75 points  |
|                 |                         | (2) | sufficient   | 51 - 60 points  |
|                 |                         | (1) | fail         | below 51 points |

**16. Study materials:**

powerpoint presentations

Study farm, library

**17. The 2-5 most important textbooks and reference books (notes, books) bibliographic data of authors, publishing date and place ISBN)( announced in Neptun)**

**Compulsory:**

Peter Dry, Brian Coombe (2005): Viticulture Volume 1: Resources

Publisher: Winetitles, ISBN 13: 9780975685006

Peter Dry, Brian Coombe (2006): Viticulture Volume 2: Practices

Publisher: Winetitles, ISBN:9781875130016

Ted Goldammer (2018): Grape Growers Handbook: A Guide To Viticulture for Wine Production  
Textbook Publisher: Unabridged, 2018, ISBN-13: 978-0967521275

Patrick Iland, Peter Dry, Tony Proffitt, Steve Tyerman (2011): The Grapevine  
Publisher Wine Promotions, ISBN 9780958160551

***Recommended:***

Wine Spectator Magazine

Publisher: Shanken Communications

ASIN: B002PXVZ8G

|   |   |
|---|---|
| <b>Course name:</b> Fruit growing technologies.   |   |
| <b>Name of course, level of qualification</b><br>Horticultural Engineering BSc  | <b>Language:</b> English                |
|   | <b>Fin review:</b> practical grade      |
| <b>Weekly number of lessons (lectur+semester): 0+4</b>  | <b>Credit value: 4</b>                  |
| <b>Curriculum period of the course: 4. semester</b>   | <b>Working schedule:</b> <u>Daytime</u> |
| <b>Responsible department:</b> Department of Horticulture   |   |
| <b>Course coordinator:</b> Dr. Király Ildikó  |   |
| <b>The teacher of the course:</b> Kajtár-Czinege Anikó  |   |
| <p><b>Course description ( in Neptun published on)</b><br/> <b>The aim of teaching the course is to:</b><br/> Students will learn about plantation establishment, agro- and phytotechnical basics of fruit plantations, methods of yield estimation and control, harvesting, storage, making goods and marketing in general.</p> <p><b>The knowledge to be learned:</b></p> <ol style="list-style-type: none"> <li>1. Preparation for planting and Planting materials</li> <li>2. Planting technology</li> <li>3. Choice of varieties</li> <li>4. Basic knowledge + Phytotechnic</li> <li>5. Crown -forming pruning</li> <li>6. Pruning methods</li> <li>7. Agricultural technology and irrigation</li> <li>8. Nutrient management</li> <li>9. Possibilities of protection against extreme weather</li> <li>10. Harvest</li> <li>11. Storage</li> <li>12. Preparation of goods</li> </ol> <p><b>Professional competences to be obtained (knowledge, skills, attitudes, autonomy and responsibilities):</b></p> <p><b>a) knowledge</b></p> <ul style="list-style-type: none"> <li>– You know the morphology and physiology of fruit plants.</li> <li>– He/she is understood the biological and technological basis of fruit production, the agro- and phytotechnical specificities and their control options, and the abiotic effects on fruit production and the effective ways of protection against them.</li> <li>– They have an overview of the specificities of the production processes involved in each fruit sector, the main theoretical and methodological foundations and the related practical knowledge.</li> <li>– You will have the necessary knowledge to identify problems in the fruit production sectors and the relevant information gathering, analysis and problem solving methods.</li> <li>– Knowledge of the terminology and jargon of the fruit sector.</li> <li>– In his/her work, pays particular attention to the creation of an environment that supports the health of individuals and society, and the use of health-friendly technological solutions.</li> </ul> |   |

### ***b) képességei***

- In the production of horticultural crops, it is capable of producing, preserving and presenting fruit crops of high biological value and food quality in a safe manner, free from damage and deterioration.
- The ability to manage and operate enterprises, companies, production plants and small and medium-sized enterprises in the fruit sector at an engineering level, taking into account environmental management and environmental protection requirements.
- In the horticultural sector, he/she is able to plan and carry out pre-production and production procedures, allocate resources professionally, participate in the preparation of proposals to support professional decisions and draw conclusions, not only at the operational level.
- Ability to formulate professional problems in the fruit-growing sector, to identify expected trends, to develop an independent professional position and to defend it in discussions.
- Ability to carry out detailed analysis, identify basic relationships and draw independent conclusions based on knowledge and methods in the field of fruit production.
- Ability to manage directly, under professional supervision, the sub-tasks of a research project at operational level.
- The ability to understand and interpret the professional knowledge that determines the functioning of the fruit sector at a systemic level.
- To learn the most important practical skills of fruit growing, based on the knowledge of biological, morphological and technological basics.
- Be familiar with the most important sources of knowledge and literature.

### ***c) attitudes***

- It represents the role of agriculture, in particular horticulture and fruit growing, in society, and represents the most important values of its field.
- Understands and applies the rules of fruit-growing terminology in both Hungarian and foreign languages.
- Has a constructive approach to professional issues. He/she is pro-active and receptive to new ideas, open to communicating in a credible way the basic results and characteristics of agricultural sciences to both professional and non-professional audiences.
- Is sensitive to problems in his/her field, seeks to analyse and solve them, and approaches the resolution of professional problems with a spirit of cooperation.
- Has an environmentally conscious approach to sustainable management.
- A sense of responsibility for the legal and ethical standards and rules governing R & D & I activities.
- It is open to the latest advances in production improvement in the fruit sector.
- Demand for quality.
- Professional responsibility and a willingness to cooperate.
- Students should be familiar with the most important basic concepts of the fruit production sector, which will enable them to enter a Master's programme in the relevant field of study.

### ***d) autonomy and responsibilities***

- - Be able to critically analyse and process information and data on fruit production in a variety of ways.

- - Be able to make decisions on fruit species and varieties to be planted, taking into account the ecological needs and economic situation of fruit crops and the ecological conditions of the area concerned.
- - To be able to make responsible decisions in the future, knowing the current economic situation and prospects of the sector.

### **The system of monitoring and evaluation (in Neptun published on)**

#### **Mid-semester study requirements:**

Attendance of lectures and seminars in accordance with the requirements of the SER (Study and Examination Regulations). Further requirements for signing the semester:

The course ends with a practical certificate. The conditions for obtaining the practical grade are:

- write an "Essay" and obtain at least a satisfactory mark.  
planned date: week 9.
- Submission of a "Plantation Installation Plan" assignment and obtaining a pass mark,  
Deadline for submission: 9th teaching week
- pass the two "tests" with at least a satisfactory mark.  
planned dates: weeks 8 and 12

The installation plan task and the test mark are developed as follows:

- (5) excellent 90 - 100 %
- (4) good 80 - 89 %
- (3) medium 66 - 79 %
- (2) sufficient 50 - 65 %
- (1) inadequate 50 % below

Topics for essays:

- Planting materials
- Support systems
- Choice of varieties
- Specific phytotechnics works
- Crown-forming pruning
- Pruning methods of peach
- Different mulching systems
- Nutrient management
- Possibilities of protection against extreme weather
- Specialities of hand harvesting
- SmartFresh technology
- Describe the types of packaging material
- Other topics connected to the semester.....

If you fail an essay, installation plan task or papers, you will be given one make-up opportunity in the last week of the term.

The practical grade will be based on the results of the installation plan task (15%), essay (10%) and papers (35% and 40%). The practical grade will be awarded on the basis of at least satisfactory completion of each of the three reports.

**Study aids:**

NJE KVK library

Study aids edited by the lecturer of the course in Moodle.

**Required and recommended literature**

- Melvin Neil Westwood (1993): *Temperate-Zone Pomology: Physiology and Culture*, Third Edition, Timber Press. ISBN: 978-1-60469-070-5
- Tara Auxt Baugher (editor), Suman Singha (Editor) (2010) *Concise Encyclopedia of Temperate Tree Fruit*. CRC Press. ISBN: 1-56022-940-3.
- Harry Baker, Royal Horticultural Society, Christopher Brickell (Editor) (2009) *Growing Fruit*. ISBN: 978 1 84000 153 2

Current articles in specialist journals ( MDPI- Horticulturae  horticulturae , Obstbaum)

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|--|--|
| <b>1. Name of the subject, Microelements in agriculture code:</b>  |  |
| <b>2. Name and level of training: Horticultural engineer BSc.</b>  | <b>3. Language of instruction: English</b> |
| <b>4. Subject list: optional</b>   | <b>5. Evaluation: Practice mark</b>        |
| <b>Weekly lesson (lecture + practice + l): 0 +1</b><br><b>Number of consultancy hours in a semester:</b>   | <b>7. Credits: 2</b>                       |
| <b>8. Curriculum area of the subject: spring semester-</b>   | <b>9. Work schedule: Full time</b>         |
| <b>10. Prerequisites: -</b>  |  |
| <b>11. Department responsible: Department of Agriculture</b>   |  |
| <b>12. Responsible lecturer: Dr. Judit Pető</b>  |  |
| <b>13. Tutor of the subject: Dr. Judit Pető</b>  |  |
| <b>14. Course description (published in Neptune)</b>   |  |
| <b>Purpose of teaching the subject (max 5 rows):</b>   |  |
| <p>The purpose of the course is to study the relationships between the microelement ions (and their compounds) into the soil solution and then the biogenic roundabout. It provides an overview of the factors involved in the microelements of plants and the importance of key elements throughout the food chain. The teaching of the subject aims to maintain a constant interest in chemistry and self-education. Examining the most important features of the most widespread microelements in student practices, their analytical detection and the demonstration of their instrumental determination help to capture the theoretical material.</p> <p>The aim of the course is also to adapt the theoretical knowledge in practice, to carry out simpler laboratory experiments.</p> |  |
| <b>The knowledge to be acquired:</b>   |  |
| <p>„Biological periodic table of elements, based on the physiological effects.<br/> Toxic or essential? – the problem of concentration and forms.<br/> Microelements in soil, plants, animals and human.<br/> Use of microelements in agriculture, foods, medical supplements and other fields.<br/> Interaction between microelements and other substances.<br/> Practice: flame colouring experiments and the use in analysis.<br/> Forms of microelements: solutions and complexes.<br/> Spectroscopic methods of analysis.<br/> Testing and examining of undefined microelements.</p>  |  |
| <b>Professional competences to be acquired (knowledge, ability, attitude, autonomy and responsibilities):</b>  |  |
| <b>a) knowledge:</b>   |  |
| <ul style="list-style-type: none"> <li>- have knowledge of the most important correlations, theories and the concepts related to their professional field</li> <li>- His theoretical and practical knowledge is organized into a system.</li> </ul>  |  |



**b) ability**

- Performs the basic analysis of the disciplines that make up the knowledge system of its field of expertise, synthetic formulation and adequate evaluation of the relationships.
- Enhance his knowledge and apply the various methods of knowledge acquisition and self-development.
- Is able to apply test methods acquired during training.

**c) attitude**

- He is open to the new achievements and innovations of this field, it seeks to understand, understand and apply it.
- Seeking continuous self-education.
- Plan and organize own learning, using the widest range of available resources.
- Has professional responsibility and cooperative skills.

**d) autonomy and responsibility**

- Characterized by a sense of responsibility in terms of professional, legal, ethical standards and rules of work and conduct.

**15. System of accountability and evaluation (published in Neptune)****Intermediate learning requirements:**

- Participation in student practices are mandatory.
- During the study period, students complete a processing of a certain, chosen microelement, and prepare an own task related to this. The final deadline for submitting the paper is 11th week of study period. Practice mark is given on the base of the written paper of the chosen microelement.

**16. Study materials, laboratory background:**

Tutorial provided by the lecturer on TEAMS surface.

The practical training of students is supported by a state-of-the-art laboratory unit. The Faculty has an accredited Soil and Plant Testing Laboratory.

**17. List of 2-5 most important compulsory and recommended literature (notes, textbooks) with bibliographic data (author, title, publication details, ISBN) (published in Neptune)*****Compulsory:***

**Pais István (1999):** A mikroelemek jelentősége az életben. Mezőgazda Kiadó, Bp.

***Recommended:***

Szabó S. A. - Győri D. - Regiusné Mőcsényi Á. (1993): Mikroelemek a mezőgazdaságban. Stimulatív mikroelemek, Béres Rt. , Bp.

Szabó S. A. - Regiusné Mőcsényi Á. - Győri D. (1994): Mikroelemek a mezőgazdaságban. Toxikus mikroelemek, Béres Rt. kiadása, Bp.

Takács S. (2001): A nyomelemek nyomában. Medicina, Bp.

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| <b>1. Course name:</b> Open field ornamental cultivation<br><b>Code:</b>   |                                  |
| <b>2. Qualification, study level:</b> engineer of horticulture BSc   | <b>3. Language:</b> English      |
| <b>4. Course type:</b> obligatory  | <b>5. Assessment:</b> colloquium |
| <b>6. Number of hours per week:</b> 2+2  | <b>7. Credit:</b> 4              |
| <b>8. Semester:</b> 4.   | <b>9. Work schedule:</b> daytime |
| <b>10. Study prerequisites:</b> -  |                                  |
| <b>11. Responsible organization unit:</b> Department of Horticulture   |                                  |
| <b>12. Course leader:</b> Dr. Károly Ecseri  |                                  |
| <b>13. Instructor:</b> Dr. Károly Ecseri   |                                  |
| <b>14. Short description of the study programme (announced in Neptun)</b>  |                                  |
| <b>Aims and objectives of the course</b> (max 5 lines):<br>The aim of the course is to provide knowledge about the importance of ornamental tree nursery production, condition of establishment, propagation and growing technologies of woody ornamental plants. Moreover the morphology, ecology and application of trees and shrubs is presented, which plays significant role in trade. The course also covers the field cultivation technology of herbaceous perennials, as well as knowledge of the most important taxa.   |                                  |
| <b>Curriculum:</b><br>Actual status and future tendencies of outdoor cultivation of ornamentals<br>Significant parts and characteristic of outdoor ornamentals<br>Parts of tree nursery, conditions of establishment, tools, equipment, machinery<br>Sexual reproduction in tree nursery<br>Asexual propagation (cutting, layering, division, micro propagation)<br>Asexual propagation (grafting, budding, stocks)<br>Growing technology of perennial plants<br>Growing technology of deciduous ornamental trees and shrubs<br>Lifting, storage<br>Packaging, transportation, marketing, quality requirements<br>Production of outdoor roses, pot growing system<br>Pruning methods of ornamental tree nursery<br>Varieties application in ornamental tree nursery<br>Innovation in outdoor ornamental cultivation<br>Plant identification practice (evergreens, deciduous trees and shrubs and perennials) |                                  |
| <b>Those students who have the following knowledge, abilities, attitudes, autonomy and responsibility can be awarded a BSc diploma:</b>  |                                  |
| <b>Knowledge</b><br>Graduates will<br>d) be aware of the biological and technological bases of ornamental tree nursery production, the agro- and phytotechnical characteristics and regulations of ornamental plants<br>e) have a good understanding of the characteristics of the production processes in ornamental plant, the most important theoretical and methodological basic principles<br>f) know the terminology of ornamental tree nursery<br>g) know ornamental plant products and have a good understanding of trading  |                                  |
| <b>Abilities</b><br>Graduates<br><ul style="list-style-type: none"> <li>• can produce safe ornamental plants of high biological quality without damage to them, preserve and package them</li> <li>• can plan and carry out procedures preparing and supporting production in the field of ornamental tree nursery, distribute resources in a professional way, take part in elaborating suggestions for professional decision making and draw conclusions</li> </ul>  |                                  |

- can conduct detailed analyses based on the knowledge and methods related to ornamental tree nursery, explore correlations and draw conclusions independently

### **Attitudes**

Graduates

- accept and represent the social role of agriculture, especially that of horticulture and the related field of science (ornamental tree nursery)
- have a constructive attitude towards professional issues.
- are sensitive to problems in their professional field and aim at analysing and solving them in collaboration with others
- are environment-conscious and have positive attitude towards sustainable agriculture
- are open to apply the latest results of horticultural production development
- have a positive attitude towards quality
- feel strong sense of professional responsibility and have cooperative skills
- are committed to the professional and ethical norms of horticulture

### **Autonomy and responsibility**

Graduates

- take responsibility for their own decisions and work as well as for the work of other employees under their supervision
- can identify problems independently in their chosen branch of horticulture and field of specialisation, develop solution strategies using their theoretical and practical knowledge and follow these strategies consistently

## **15. The system of assessment and evaluation (announced in Neptun)**

### ***Assignments:***

- Participation of practices
- One midterm exam 6. week (20 point)
- Plant identification test: 15 species or varieties (12 woody plants and 3 perennials) identification from the list in 12. week (30 point). At least 50 % (15 point) is required to signature of semester.
- Once opportunity of supplementary midterm exam or plant identification test in 13. week

### ***Final examination requirements:***

- At least 50 % (25 point) during the semester
- at least 50 % of the plant identification test
- No grade is offered

The type of exam: colloquium

- Mode: written. Student takes exam from all of the exam items.
- Application: in NEPTUN according to the requirements

Grading:

|                           |           |
|---------------------------|-----------|
| Midterm exam              | 20 point  |
| Plant identification test | 30 point  |
| Colloquium:               | 50 point  |
| Total:                    | 100 point |

|                  |                |            |
|------------------|----------------|------------|
| 5 (excellent)    | 86-100 point   | 86-100 %   |
| 4 (good)         | 76-85 point    | 76-85 %    |
| 3 (satisfactory) | 61-75 point    | 61-75 %    |
| 2 (sufficient)   | 50-60 point    | 50-60 %    |
| 1 (fail)         | below 49 point | below 50 % |

Exam items:

- Actual status and future tendencies of outdoor cultivation of ornamentals
- Parts of tree nursery, conditions of establishment, tools, equipment, machinery
- Sexual reproduction in tree nursery
- Asexual propagation (cutting, layering, division, micro propagation)

Asexual propagation (grafting, budding, stocks)  
Growing technology of deciduous ornamental trees and shrubs  
Growing technology of perennials  
Lifting, storage  
Packaging, transportation, marketing, quality requirements  
Production of outdoor roses, pot growing system

**16. Study materials:**

Powerpoint presentations, slideshow of plant pictures. Botanical garden and glasshouse of Faculty

**17. The 2-5 most important text books and reference books**

(notes, books) bibliographic data of authors, publishing date and place ISBN)( **announced in Neptun**)

***Compulsory:***

Magdolna Sütöri-Diószegi - Márk S.: Modern growth regulation systems in ornamental tree nursery In: Éva Németh Zámboiné, Szilvia Sárosi, Levente Horváth: Modern Horticulture. Corvinus University of Budapest, Faculty of Horticultural Science, 2013. (ISBN: 978-963-503-552-6)  
<http://kertesztananyag.hu/modern-systems-in-production-and-commerce-in-ornamentals/nursery>

Ildikó Kohut – Márk Steiner.: Modern system in cultivation, trade and application of perennials. In: Éva Németh Zámboiné, Szilvia Sárosi, Levente Horváth: Modern Horticulture. Corvinus University of Budapest, Faculty of Horticultural Science, 2013. (ISBN: 978-963-503-552-6)  
<http://www.kertesztananyag.hu/modern-systems-in-production-and-commerce-in-ornamentals/perennials>

***Reccomended:***

Dirr, M.: Manual of Woody Landscape Plants. Stipes Publishing Company, Champaign, Illinois, USA. 2001. ISBN: 978-158-874-868-3

Krüssmann, G.: Manual of Cultivated Conifers. Timber Press, Portland, Or. USA. 1985. ISBN: 978-160-469-111-5

Krüssmann, G.: Manual of Cultivated Broad-leaved Trees and Shrubs. Timber Press, Portland, Or., USA. 1989. ISBN: 978-091-730-478-1

Schacht, W., Jelitto, L.: Hardy Herbaceous Perennials: Two volumes. Timber Press, Portland, Or. USA. 1990. ISBN: 978-0881921595

|   |                                  |
|---|----------------------------------|
| <b>1. Course name:</b> Open field vegetable growing<br><b>Code:</b>   |                                  |
| <b>2. Qualification, study level:</b> Horticultural engineer<br>BSc   | <b>3. Language:</b> English      |
| <b>4. Course type:</b> obligatory   | <b>5. Evaluation:</b> colloquium |
| <b>6. Number of hours per semester:</b> 2+2   | <b>7. Credit:</b> 4              |
| <b>8. Semester:</b> 4   | <b>9. Work schedule:</b> daytime |
| <b>10. Study prerequisites:</b>   |                                  |
| <b>11. Responsible organization unit:</b> Department of Horticulture  |                                  |
| <b>12. Course leader:</b> Eleonóra Kecskés-Nagy   |                                  |
| <b>13. Instructor:</b> Zsuzsanna Tóth-Taskovics   |                                  |
| <p><b>14. Short description of the study programme</b></p> <p><b>Aims and objectives of the course:</b></p> <p>The aim of the course is the students get to know the relevance of field vegetable cultivation. To learn technological knowledge for field cultivation of important vegetables. Students should be able to coordinate, execute and commodity production in the field technologies.</p> <p><b>Curriculum:</b></p> <p><b>Lecture topics:</b></p> <ol style="list-style-type: none"> <li>1. Field cultivation of tomato</li> <li>2. Field cultivation of sweet pepper</li> <li>3. Cultivation of pea</li> <li>4. Cultivation of green bean</li> <li>5. Cultivation of cabbage</li> <li>6. Cultivation of savoy cabbage</li> <li>7. Cultivation of cauliflower</li> <li>8. Cultivation of broccoli</li> <li>9. Cultivation of onion</li> </ol> <p><b>Practices topics</b></p> <ol style="list-style-type: none"> <li>1. Cultivation of sweet corn</li> <li>2. Cultivation of paprika</li> <li>3. Cultivation of bok choy and kohlrabi</li> <li>4. Cultivation of lettuce</li> <li>5. Making of a field technological project and report</li> <li>6. Seedling identification and test</li> </ol> <p><b>Those students who have the following knowledge, abilities, attitudes, autonomy and responsibility can be awarded a BSc diploma:</b></p> <p><b>Knowledge</b></p> <p>Graduates will:</p> <ul style="list-style-type: none"> <li>- have comprehensive knowledge of the facts, directions and boundaries of the topics of the given field of training;</li> <li>- have knowledge of the most important correlations, theories and the concepts related to their professional field;</li> <li>- knows the knowledge acquisition and problem-solving methods of the main theories of their professional field;</li> <li>- have the knowledge that is necessary for starting an MSc course of the given (and other) field of training;</li> <li>- have comprehensive knowledge of the legal regulations and ethical norms related to their professional field;</li> <li>- have the knowledge, abilities and attitudes that relate their profession to specific fields of civic literacy.</li> </ul> <p><b>Abilities</b></p> <p>Graduates</p> <ul style="list-style-type: none"> <li>- can fulfil their tasks related to their qualifications;</li> <li>- can perform a basic analysis of the disciplines of their field of research and provide a synthetic definition and adequate assessment of correlations;</li> </ul> |                                  |

- can employ the procedures of their field of interest as well as the most important theories and the related terminology;
- understand and use the online and printed literature related to their professional field in Hungarian and foreign language and also have the knowledge of effective information searching and information processing in their professional field;
- understand and interpret longer texts, as well as texts with visual signs, typography tools and icons, tables, datasets, moving and still pictures, maps and diagrams;
- identify routine problems, explore and determine the theoretical and practical background needed for their resolution and solve them using standard procedures;
- plan and organize their own independent learning and use the widest range of sources available;
- utilize the resources of their workplace effectively using their professional knowledge.

#### **Attitudes**

##### Graduates

- accept and represent the social role of their profession and its relationship with the world;
- are open to transit and convey the basic characteristics of the comprehensive way of thinking of the professionals in their professional field and the practical mechanisms of their profession;
- are open to get acquainted with, accept and convey the technological developments and innovations in their professional field;
- make their decision with respect to all laws, regulations and ethical norms even in situations requiring a complex approach;
- aim at solving problems in collaboration with others;
- develop themselves continuously to serve the public.

#### **d) autonomy and responsibility**

##### Graduates

- examine comprehensive professional questions thoroughly without help and give an answer to them in unexpected situations on the basis of given resources;
- examine comprehensive and special professional questions thoroughly and give an answer to them on the basis of given resources using professional guidance;
- carry out their duties independently and critically assess and continuously correct their work;
- participate in shaping and justifying professional assumptions;
- accept the basic assumptions of their professional field, develop their skills and acquire new competencies (by learning independently or attending further education courses) which make them suitable for responsible positions in a corporation.

### **15. The system of assessment and evaluation**

#### **Assignments:**

Evaluation (pactical grade):

- **passed (grade 2):**
  - the average of the two midterm tests reaches at least 60%
  - the home project reaches at least 50%
  - the plant identification test is as least 50%
- **average (3):** midterm tasks averaging at 70%, but none of the tasks can be worse than 60%.
- **good (4)** midterm tasks average of at least 80%, but each task is at least 60%.
- **excellent (5)** midterm tasks average of at least 90%, but each task is at least 70%.

It is possible to re-sit the midterm exams on the 13th week of the semester. Students can re-sit their weaker midterm exam or those where they did not achieve 60%. There is one possibility to repeat the seed identification test also on the 13th week of the semester.

#### **Final examination requirements:**

The semester ends with a colloquium. The topics of the exam are the same as those of the semester. Razing according to TVSZ

### **16. Study materials:** Powerpoint presentations. Study farm.

### **17. The most important text books and reference books**

Swiader, J. M. ; Ware, G. W. ; McCollum, J. P.(1992): Producing vegetable crops. Interstate Printers and Publishers Inc. ISBN : 081342903X

W.E. Splittstoesser(1990): Vegetable Growing Handbook Chapman &Hall, New York ISBN 0442239718

|   |  |
|---|--|
| <b>2. Name of the subject, Animal husbandry code:</b>   |  |
| <b>2. Name and level of training: Horticultural engineer, FOSZK / <u>BSc</u> / MSc / SZT</b>  | <b>3. Language of instruction: English</b>                         |
| <b>4. Subject list: <u>compulsory</u> / optional</b>  | <b>5. Evaluation: <u>Colloquium</u>/ Practice Mark / Signature</b> |
| <b>Weekly lesson (lecture + practice + l): 2+0</b>  | <b>7. Credits: 2</b>   |
| <b>Number of consultancy hours in a semester:</b>   |  |
| <b>8. Curriculum area of the subject: 4</b>   | <b>9. Work schedule: <u>Full time</u> / Correspondent</b>          |
| <b>10. Prerequisites: -</b>   |  |
| <b>11. Department responsible: Department of Agricultural Science</b>   |  |
| <b>12. Responsible lecturer: Dr. András Palkovics</b>   |  |
| <b>13. Tutor of the subject: Dr. András Palkovics</b>   |  |
| <b>14. Course description (published in Neptune)</b>  |  |
| <b>Purpose of teaching the subject (max 5 rows):</b>  |  |
| To familiarize students with the specific skills of detailed livestock breeding in addition to general animal husbandry knowledge. The purpose of the semester is to enable students to master the characteristics of the main types of cattle, sheep, pig and poultry species, the main characteristics of breeding, keeping and laying the individuals in the given utilization direction, and to understand the main breeding and production indicators.   |  |
| <b>The knowledge to be acquired (weekly division):</b>  |  |
| The basics of nutrition. The chemical composition of feedingstuffs. Traffic Power. Determination of the protein value of feedingstuffs. The basics of animal production. General animal husbandry. The meaning of animal husbandry is significant. Origin and domestication of economic animals. The taxonomy of economic animals. Growth and development of economic animals. Reproduction of economic animals. Application of population genetics in animal husbandry. Breeding Value Estimation. Selection. Breeding Procedures. Organization of breeding, registration.<br>Cattle-breeding. Name of cattle by age and sex. Cattle breeds. Breeding Organization. Calf. Holding technology Breeding of cattle. Composition and qualification of milk. Cattle-fattening. The beef and its qualification. Good breeding. The value of the sheep. Wool. Variety, breeding procedures. Propagation. Animal nutrition. Hold Technology.<br>Pig farming. Measurement properties of pigs. Breed Pork. Breeding of pigs. Production Technology.<br>Poultry farming. The concept of poultry and the importance of poultry farming. Breeding of poultry and poultry farming. Breeding hens. Breeding turkeys. Lúdtenyésztés. Duck breeding. Muscovy duck rearing. Mulardkacsatartás. Animal Hygiene and Flock Health. Animal and its environment. Infectious diseases. Environmental aspects of livestock farming. General rules for the placement of livestock farms. |  |
| <b>Professional competences to be acquired (knowledge, ability, attitude, autonomy and responsibilities):</b>   |  |

**a) knowledge**

- Familiarity with the value-measuring properties of livestock: qualitative and quantitative properties, heritability and concept, primary value metrics, secondary value metrics, inheritance and components of each value metering.
- Know breeding methods: purebred breeding, crossbreeding.
- Know the breeding technology of the main animal species: cattle breeding, pig breeding, poultry breeding, sheep breeding
- know the basics of feeding.
- know the operation of the major animal breeding sectors, the basic technologies.

**b) ability**

Graduates

- possess all the knowledge that makes them capable of direct professional communication
- are capable of recognizing and eliminating routine problems in the horticultural production process.
- are able to observe and enforce food chain safety principles when producing food.
- are able to apply test methods acquired during training
- keep track of the environmental, hygiene, food safety, nutrition and safety regulations
- know the interaction between the environment and the horticultural production and the complexity of their work.

**c) attitude**

Graduates

- have a constructive approach to professional issues.
- are sensitive to the problems that arise in any sector of agriculture
- takes responsibility for compliance with food chain safety conditions.
- social and personal health and environment protection play an important role in their professional decision making
- are sensitive to the environmental and food safety aspects of agricultural production

**d) autonomy and responsibilities**

Graduates

- feel strong sense of responsibility towards professional, legal and ethical norms and regulations related to the work with microbes
- plan their professional development independently
- carry out decision-making and management functions independently on the level of production organisation units
- take responsibility for their own decisions and work as well as for the work of other employees under their supervision
- take responsibility for the consequences of their professional decisions
- can identify problems independently in their chosen branch of horticulture and field of specialisation, develop solution strategies using their theoretical and practical knowledge and follow these strategies consistently

**15. System of accountability and evaluation (published in Neptune)**

**Intermediate learning requirements:**

• The lectures are an integral part of the training process, so participation in the lectures is expected. The mid-term requirement is to produce 1 study on the production (at national level) of a free field of choice for arable crops over the past five years and its market situation. The length of the study is 3-5 pages, in which any writer can quote only the exact source. The deadline for submission is the last week of the term.

Exam conditions:

- Oral colloquium from the themes of the course..

86-100% excellent (5);

76-85% good (4);



61-75% satisfactory (3);  
50-60% passed (2);  
0 to 49% fail (1).

**16. Study materials, laboratory background:**

- Tissue culture and molecular genetics laboratory of the Department
- Library of the Department

**17. List of 2-5 most important compulsory and recommended literature (notes, textbooks) with bibliographic data (author, title, publication details, ISBN) (published in Neptune):**

**Obligatory:**

Kozák J. (szerk.): Állattenyésztés. DE AMTC AVK. Debrecen, 2007 ISBN 978-963-9732-46-9  
Szabó F. szerk.: Általános állattenyésztés. Mezőgazda Kiadó, Budapest, 2004

**Compulsory:**

Szabó F. szerk.: Általános állattenyésztés. Mezőgazda Kiadó. Budapest, 2015. ISBN: 9789632867113  
Holló I. szerk.: Szemléletváltatások az állattenyésztésben. Mezőgazda Kiadó, Budapest, 2012  
ISBN: 9789632866734  
Schmidt J. szerk. (2015): A takarmányozás alapjai. Mezőgazda Kiadó. Budapest, 2015.  
ISBN: 9789632863399  
Radics L. - Seregi J. szerk. (2005): Ökológiai szemléletű állattermék-előállítás. Szaktudás Kiadó Ház,  
Budapest, 2005 ISBN: 9639553328

|   |  |
|---|--|
| <b>1. Name of the subject, Quality Management code:</b>   |  |
| <b>2. Name and level of training:</b> Horticultural engineer BSc.   | <b>3. Language of instruction:</b> English |
| <b>4. Subject list:</b> Compulsory  | <b>5. Evaluation:</b> Practical grade      |
| <b>6. Weekly lesson (lecture + practice + 1):</b> 0+2+0   | <b>7. Credits:</b> 2                       |
| <b>8. Curriculum area of the subject:</b> 4. semester   | <b>9. Work schedule:</b> Full time         |
| <b>10. Prerequisites:</b> non   |  |
| <b>11. Department responsible:</b> Department of Horticulture   |  |
| <b>12. Responsible lecturer:</b> Kecskésné Dr. Nagy Eleonóra  |  |
| <b>13. Tutor of the subject:</b> Kecskésné Dr. Nagy Eleonóra  |  |
| <p><b>14. Course description (published in Neptune)</b></p> <p><b>Purpose of teaching the subject (max 5 rows):</b><br/> The aim of the subject is to impart basic knowledge of quality management, to practically interpret and introduce the fundamental concepts and principles of quality management. Acquiring this knowledge contributes to the development of a quality mindset. Students become acquainted with the emergence and background of quality philosophies, the role of customer-centricity, the characteristics of value creation and product manufacturing processes, as well as the principles and methods of regulation.</p> <p><b>The knowledge to be acquired:</b></p> <p>The objectives of teaching the subject, including the requirements aligned with it</p> <p>The emergence of quality philosophies, their societal, economic, and market background</p> <p>The differing characteristics of self-assessment and standardized systems; Changes over time in standardized requirements; Operation and role of integrated systems in agricultural and environmental processes</p> <p>The main types of standards, characteristics of quality standards; Origin of the ISO 9000 standard family, its members, the role of certification within enterprises and in the market. The purpose and significance of applying the principles of the ISO 9000 standard in the operation of an organization in agriculture and environmental protection; Development trends</p> <p>The main elements of the regulatory system of quality management</p> <p>Types of production processes, classification and significance of processes; The role of process approach, recurring processes</p> <p>Basic concepts and relationships, principles related to product quality, process management and its significance. Concept, characteristics, and quality loop of the production process</p> <p>Tools for process control, measurement of compliance with requirements, tools for process improvement</p> <p>Customer-centricity, determining partners' needs; Kano quality model</p> <p><b>Professional competences to be acquired (knowledge, ability, attitude, autonomy and responsibilities):</b></p> <p><b>Knowledge:</b></p> <ul style="list-style-type: none"> <li>• Familiar with quality management basic concepts relevant to agricultural production and the entire agricultural economy, their interrelationships, relevant agricultural processes, their management mechanisms, and requirements formulated by customers and other stakeholders.</li> <li>• Informed about the principles and relationships of quality policy at national and international levels.</li> <li>• Possesses management knowledge applicable to product production regardless of the size of the farming unit.</li> <li>• Familiar with and capable of applying problem-solving techniques, methods of assessing risks, and their management.</li> <li>• Familiar with the professional terminology of quality management areas, its characteristics, forms of effective communication, methods, and tools.</li> </ul> |  |

- Familiar with modern leadership theories and organizational management directions to strengthen the quality improvement and health-supporting nature of work organizations.

**Capability:**

- Capable of independently forming professionally well-founded opinions and conveying them in the areas of quality, environment, occupational health and safety, and food safety related to agriculture.
- Capable of comprehensively understanding the prerequisite system necessary for professional advancement in agriculture and environmental protection and is familiar with management standards that can assist in the supervision and development of these areas.

**Attitude:**

- Characterized by a demand for quality.
- Assumes and credibly represents the social role of agricultural economics and related scientific fields, advocating for the key values of their field.
- Demonstrates cooperation and relationship-building skills.
- Open to applying the latest developments in agricultural production.
- Approaches the resolution of emerging quality assurance problems with a collaborative intention.

**Autonomy and responsibility:**

- Independently capable of identifying problems in quality management, and with the assistance of theoretical and practical knowledge, capable of developing strategies for their resolution and consistently following these strategies; in unforeseen decision-making situations, independently conducts comprehensive consideration of fundamental professional issues and their development based on available resources.
- Conducts comprehensive and specialized professional considerations and developments based on given sources under professional guidance.
- Works independently with critical evaluation of activities and continuous correction.
- Assumes responsibility in forming and justifying professional opinions.
- Assumes responsibility for foundational views in their field.
- Enhances existing skills through independent learning or organized training and acquires new competencies to become suitable for assuming a responsible position within an organization.

**15. System of accountability and evaluation**

**Intermediate learning requirements:**

Requirement for completing the semester:

- writing two midterm exams - evaluation is based on the average result

Midterm exams can be retaken in the 13th week of the semester. The retake midterm covers the entire semester's material. In case of a retake, evaluation is based on the average of the retake midterm result and the higher score obtained previously.

Evaluation according to the Study and Examination Regulations

The instructor will provide detailed information about the midterm requirements to the students during the first contact session.

**Practical grade:**

As mentioned above, the calculated grade is based on the average result of the two midterms.

**16. Study materials, laboratory background:**

List of recommended literature in point 17; Materials provided by the instructor on TEAMS to aid learning.

**17. List of 2-5 most important compulsory and recommended literature (notes, textbooks)**

Tim Landerwille (2015): Quality Management System Guide,  
<https://www.icao.int/NACC/Documents/Meetings/2016/AIMQMS/QMSFPLAIMQualityManagementSystemsGuide.pdf>(query date: 2023.12.05.)

Quality Management System, TLFeBook p: 264-287; <https://ccsuniversity.ac.in/bridge-library/pdf/Engg-ME-8th-semester-Quality-Management-Systems.pdf> (query date: 2023.12.05.)

Laura Bravi, Federica Murmura, Gilberto Santos (2019): The ISO 9001:2015 Quality Management System Standard: Companies' Drivers, Benefits and Barriers to Its Implementation, QUALITY INNOVATION PROSPERITY, 23/2 – 2019, DOI: 10.12776/QIP.V23I2.1277, p: 64-82 (query date: 2023.12.05.)

Standard of ISO 9001:2015 Quqlity Management System - Requirements

*Erdei J-Nagy J,B-Topár J-Tóth Zs (2022): Minőségmenedzsment*  
BMGE, GTK, Budapest (*Interneten elérhető*)