



## John von Neumann University Faculty of Horticulture and Rural Development

**(HU KECSKEM03) 2022-2023 academic year**

Course unit	Semester	ECTS	Department	Tutor
Wines of the world	all year	3	Department of Horticulture	Ferenc Baglyas, PhD
Sensory evaluation of wines	spring	3	Department of Horticulture	Ferenc Baglyas, PhD
Introduction to biotechnology	all year	3	Department of Agricultural Science	Virág Mihálka, PhD
Genetics	spring	3	Department of Agricultural Science	Virág Mihálka, PhD
Microelements in agriculture	all year	3	Department of Agricultural Science	Judit Pető, PhD
Agrochemistry	spring	3	Department of Agricultural Sciences	Judit Pető, PhD
Basis of plant application	all year	3	Department of Horticulture	Károly Ecseri PhD
Hidden reserves of flora	all year	3	Department of Horticulture	Károly Ecseri PhD
Livestock breeding	all year	3	Department of Agricultural Economy and Rural Development	András Palkovics, PhD
Project writing	all year	3	Department of Agricultural Economy and Rural Development	Katalin Herbály, PhD
Principles of tourism	all year	3	Department of Agricultural Economy and Rural Development	Katalin Herbály, PhD
Microeconomics	all year	3	Department of Agricultural Economy and Rural Development	Katalin Herbály, PhD
Macroeconomics	all year	3	Department of Agricultural Economy and Rural Development	Katalin Herbály, PhD
International economics	spring	3	Department of Agricultural Economy and Rural Development	Katalin Herbály, PhD

Green infrastructure in the climate change	all year	3	Department of Agricultural Economy and Rural Development	Edit Hoyk, PhD
Natural values of Hungary	all year	3	Department of Agricultural Economy and Rural Development	Edit Hoyk, PhD
Rural tourism	all year	3	Department of Agricultural Economy and Rural Development	Edit Hoyk, PhD
Rural development	all year	3	Department of Agricultural Economy and Rural Development	Irén Kőszegi PhD
Obstsortenzüchtung herbst	fall	3	Lehrstuhl für Gartenbau	Ildikó Király, PhD
Obstsortenkunde	spring	3	Lehrstuhl für Gartenbau	Ildikó Király, PhD
Intercultural Course	all year	3	Every Faculty of NJE	Institutional Erasmus coordinator

## SHORT COURSE DESCRIPTIONS

### *Wines of the world*

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Wine has been the part of human culture. It is a special product that is consumed in occasions without being an essential food. Grape has never been grown in fertile soils where corn was cultivated. In 6-8 thousand years BC countries of the middle East started to grow grape as a fruit, but also for wine. Students of the Erasmus course came mostly from Europe's old world winemaker countries like Spain, Italy, France. Their wine culture will also be demonstrated in course lessons. The course requires knowledge in wine, winemaking and sensory evaluation of wine. The students will get acquainted with the wine regions of the world's leading wine producing countries, with the main grape varieties and wines grown there. They need to showcase the wine production of a selected country through a presentation.

### *Sensory evaluation of wines*

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Wine is part of human history. It is a sacred beverage that is present in the Christian eucharist. Over thousands of years grape and wine making spread all over the world. Different types of wines are made in different countries and regions in an overwhelming variability. If we want to understand the wines more deeply, It is important to learn the sensory attributes and characteristics of wine. In this course Erasmus students will learn to recognize them.

### *Introduction to biotechnology*

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Biotechnology is one of the most research intensive industries. The course gives an introduction to the past, the present and the future trends of biotechnology. After giving an overview of genetical and molecular background of biotechnology, some of the tools and applications will be presented through some well-known example (food and medical biotechnology, cloning, genetic modification, GMO's, tissue culture techniques, human genome project, marker assisted selection etc.). Furthermore, ethical aspects of biotechnology and genetic engineering will be discussed. Tissue culture and molecular biology laboratory of the university will be introduced to the students.

### *Genetics*

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The course gives basic knowledge in genetics. The course will cover fundamentals and history of genetics, cellular and molecular basics of inheritance, Mendelian and non-Mendelian inheritance. Furthermore, students will learn about linkage and gene mapping, mutation and polyploidy, inheritance of quantitative traits, heterosis effect, inbreeding depression and gene- and genome preservation.

### *Microelements in agriculture*

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The course shows the importance of microelements - mainly in agriculture, the processes influencing the quantity and the form of microelements in the soil, factors influencing the uptake of microelements by plants and the role and importance of these elements in animals and the human body as well. Microelements play role in most biochemical processes, contribute to human health and on the other hand, deficiency symptoms or toxic events. The question is complicated, the aim of this course to bring students closer to understanding the importance of micronutrients

### *Agrochemistry*

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The subject aims to introduce basics and significance of agrochemistry through the processes in soil to preserve soil fertility, to improve and enhance the quality of the crop, taking into account the sustainability of the environment. Main topics: Nutrient content of soils, nutrient uptake by plants, agrochemical basics of fertilization, organic and inorganic fertilizers, Calculation of nutrient demand based on soil - plant relationship, introduction of nutrient management in practice, consideration of soil and manure interactions in agricultural management are also important.

### *Basis of plant application*

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The students will meet with the ecological and aesthetical principles of plant associations. Development and changing of artificial plant communities will show in private gardens and public green areas. The course introduces the basics of garden design, the plant relationship between garden and landscape, the role of gardening styles, the significance of colors and shapes in plant application. The aim of the course is students be able to design independently the concept of plant application in a smaller outdoor area.

### *Hidden reserves of flora*

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A more detailed presentation of ornamental plant groups that is not possible to study in the undergraduate and graduate programs. Raising students' attention, expanding their knowledge of plants with species that are promising or may be in the future in green surface management. Course's main topics: field wildflowers, the flora of East Asia, plants with blue flowers, special plants of S-Africa, bamboos, stonecrop species, varieties, plant recorders, unknown rose species, unique pines, rowan – the treasures of the Carpathian Basin, Geranium species, moss, „Single” plant species.

### *Livestock breeding*

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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.

### *Project writing*

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The purpose of the course is to study the short summary of the Regional Policy of the European Union in order to understand the background of EU Funds. Project development and successful proposal writing depends on the drafting of high-quality proposal texts. This course is designed to go in depth on selected parts of EU projects. Furthermore, to provide the knowledge, skills and abilities for students to know how to establish required text parts. Finally, students must be able to improve and fine application texts to match evaluator's expectations. The aim of the course is also to adapt the theoretical knowledge in practice

### *Principles of tourism*

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The purpose of the course is to explain the history of tourism and the characteristics of the tourism market. The other aim is to develop an understanding of the importance of the travel and tourism industry to host destinations, to communities and to the economy globally and locally. It describes the the positive and negative impacts of tourism and the importance of sustainability. Students will understand how the travel and tourism industry responds to change, including technological advances. The aim of the course is also to adapt the theoretical knowledge in practice.

### *Microeconomics*

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This course offers an introduction to the market system, emphasizing the importance of needs and scarcity, and also the economic interactions among households, business firms and the government. Topics include supply, demand, and equilibrium. You will learn how prices help coordinate market activities, and how people respond to changes in price. You will also study the relationship between price and supply, examine the elasticity of supply and demand, and gain a strong understanding of the essential subjects of taxes and subsidies. The course covers the optimum choice of consumers, and the market models, as well.

### *Macroeconomics*

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Macroeconomics is a course that introduces students to the principles that apply to an economic system as a whole. The course places particular emphasis on the study of national income and price-level determination. It also develops students' familiarity with economic performance measures, the financial sector, stabilization policies, economic growth and the roles of the government. Students learn to use graphs, charts, and data to analyse, describe, and explain economic concepts on national level.

### *International economics*

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One of the key aims of the course is to discover the origins of today's major international economic institutions. Besides that, students will learn about how these groups function as well as their successes and failures. Students will have the opportunity of in-depth exploration of the key theoretical trends that have developed in the study of international relations and regional integration, highlighting the problem of trans-nationalization, regionalism and multi-level governance. Participation in the course does not require any preconditions, however, basic economic knowledge would be an advantage.

### *Green infrastructure in the climate change*

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Climate change is one of the biggest challenge nowadays. Mitigation and adaptation to this process is essential. Cities are very sensitive, especially in summer, because of the heat waves, droughts and excessive rainfalls – which can cause flash floods. Green infrastructure is the best adaptation tool against harmful effects of the climate change. During the course, we discuss the characteristics and importance of green infrastructure from different aspects. It means for example types, design options, shading ability, water retention, etc.

### *Natural values of Hungary*

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This course – as an optional special course – introduce students to natural values of our country. Students get a picture about the characteristics of Hungary's landscapes, the geological, morphological and vegetation structure of National Parks and other protected areas. These values are the basis for example of horticultural and other agricultural activities. The course gives information about connections between horticulture, agriculture and rural development. In addition, the students get more deeply knowledge about the country where they spend their semester.

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### *Rural development*

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Students should get acquainted with the significant processes that fundamentally determine the current conditions of rural societies (urbanization, globalization, occupational stratification), the problems of rural areas in OECD countries, and the rural development methods, models and best practices used in them.

#### Conversations:

Rural, rural research  
Globalization  
Agriculture  
Rural settlements  
Rural tourism  
Renewable energy sources  
Protection against desertification

### *Obstsortenzüchtung*

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Der Kurs bietet Einblicke in die wichtigsten Methoden und Ziele der Obstsortenzüchtung und auch die wichtigsten Obstsortenzüchtungsinstitute werden vorgestellt. Das ungarische Apfelmehrungsprogramm wird im Detail diskutiert.

### *Obstsortenkunde*

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Der Kurs befasst sich mit den wichtigsten ungarischen und ausländischen Obstsorten. Die Sorten werden gemäß den folgenden Punkten bewertet: Ursprung, vegetative und generative Merkmale, Ertrag, Widerstandsfähigkeit.

### *Intercultural Course*

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Intercultural Course is a compulsory Erasmus course for every incoming Erasmus student in the whole academic year. The course contains some social exercises such as national events when you introduce your home country or international days when you need to cooperate with other foreign and local students or make videos or photos about your Erasmus life at John von Neumann University. It offers some trips in Hungary or visiting some interesting institutions in Kecskemét also. In the most case these events take place in the youth international community called *English Chat Club* in Kecskemét, which is operated by young Hungarian students and foreign volunteers. The course is controlled by the institutional Erasmus Coordinator and the other workers in the International Office.