



HUNGARIAN UNIVERSITY OF  
AGRICULTURE AND LIFE SCIENCES  
INSTITUTE OF PLANT PROTECTION

Address: 1118 Budapest, Villányi str. 29-43.

# **COURSE CATALOGUE for Exchange students**

## **2026/27 Academic year**

The Institute of Plant Protection of MATE at Buda Campus is currently offering the following core courses for the 2026/27 academic year. Additional courses will be announced before the start of the semester, providing a wider range of courses to choose from.

Exchange students are integrated with full degree international students during the semesters' workflow in the following study programmes:

- BSc in Horticultural Engineering
- MSc in Horticultural Engineering

Exchange students can take both bachelor's and master's subjects regardless of their study level or semester; however, timetable conflicts may occur.

Available subjects (based on MATE [curricula](#)) are mostly part of full degree study programmes, as exchange students are integrated with full degree international students during the semesters' workflow. Additional courses will be announced before the start of the semester, providing a wider range of courses to choose from.

### **2026/27 Autumn semester**

**Lectures:** from early September to mid December.

**Exams:** mid December to late January

### **2026/27 Spring semester**

**Lectures:** from early February to mid May.

**Exams:** mid May to late June

## 2026/27 Autumn semester

| BACHELOR PROGRAMME        | SUBJECT CODE | SUBJECT NAME                          | ECTS Credits | <i>relevant semester of the study program at MATE</i> |
|---------------------------|--------------|---------------------------------------|--------------|---|
| Horticultural Engineering | NVVED028N    | Plant Pathology                       | 3            | 5   |
|                           | NVVED020N    | Integrated Pest Management, Herbology | 4            | 7   |
| MASTER PROGRAMME          | SUBJECT CODE | SUBJECT NAME                          | ECTS Credits | <i>relevant semester of the study program at MATE</i> |
| Horticultural Engineering | NVVED029N    | Principles of Plant Pathology         | 3            | 3   |

## 2026/27 Spring semester

| BACHELOR PROGRAMME        | SUBJECT CODE | SUBJECT NAME                       | ECTS Credits | <i>relevant semester of the study program at MATE</i> |
|---------------------------|--------------|------------------------------------|--------------|---|
| Horticultural Engineering | NVVED037N    | Plant Protection Zoology           | 3            | 4   |
| MASTER PROGRAMME          | SUBJECT CODE | SUBJECT NAME                       | ECTS Credits | <i>relevant semester of the study program at MATE</i> |
| Horticultural Engineering | NVVED039N    | Basics of Plant Protection Zoology | 3            | 3   |

# Plant Pathology

**Study Programme: BSc in Horticultural Engineering**

**SEMESTER: 2026/27/1**

*Relevant semester of the Study Programme at MATE: 5*

**SUBJECT CODE: NVVED028N**

**ECTS Credits: 3**

## **AIM OF SUBJECT:**

The course presents diseases of horticultural plants. It deals with the causes of diseases, the course of diseases and the methods of disease control. The aims of the course is to provide students with a practical knowledge of the major diseases of horticultural plants. Students will learn to identify and recognize diseases of horticultural plants based on the knowledge gained during the lectures and laboratory practices.

## **CONTENT:**

**Topics: Basic structures of fungi, Viruses, Phytoplasmas, Bacteria, Oomycota, Ascomycota , Mitosporic fungi, Basidiomycota, Elements of Plant Pathology, Symptomatology, Knowledge of Pesticides**

## **GRADING SYSTEM:**

### **Assessment**

Students are required to successfully complete a practical test on the basic structures of fungi (Test I.), prepare a self-made herbarium and take an exam based on it during the teaching period, as well as pass a practical test on disease identification (Test II.) and a written exam during the examination period.

### **Practical tests**

There will be two written tests during the semester. Test I. covers the basic structures of fungi (characterization of fungal structures), and Test II. covers diagnostics (5 diseases must be identified, defining the pathogen(s), their taxonomic status, and the signs of the disease). Learning materials required for the tests are provided by the Department on the e-learning platform.

Students who are absent from Test I. or receive an insufficient (1) mark must repeat Test I. (see above for dates or at a time agreed in advance with the

class). Students are also given the opportunity to complete Test II. during the teaching period. Students with good (4), moderate (3), or sufficient (2) marks may repeat the tests to improve their grades. Assessment: with marks.

### **Herbarium**

Students are required to prepare a self-made herbarium containing 20 cultivated plants or plant parts infected with plant pathogens. Only characteristic, host-specific plant parts are accepted. Diseased plants (or plant parts) must be mounted on A4-sized, semi-wood-free drawing paper using paper-based adhesive tape. The scientific name of the host plant, the name of the disease and the pathogen, the location and date of the collection and the name of the collector must be indicated on the label. The herbarium label template is available on the course's e-learning platform. The herbarium must be put in a hard-cover, bindable folder. Weed diseases are not accepted. Students must be familiar with their own herbarium, as they are required to take an exam based on it. A maximum of eight mistakes is allowed during the herbarium exam. The exam will take place on two scheduled dates (see above or as agreed with the class).

**Assessment: Accepted / Not accepted.**

### **Requirements for semester recognition:**

Participation in practical lessons and a successful completion of practical test on basic structures of fungi (Test I.) during the teaching period. Only 3 absences are permitted from the practical lessons. The missed material must be made up.

### **Requirements for exam registration:**

Only students who have fulfilled the requirements for semester recognition and have an accepted herbarium are allowed to register for the exam at the end of the semester. The exam consists of two parts: (1) a written test (pre-exam Test II.), and (2) a written exam. If the mark of Test II. (during the teaching period) is excellent (5) or good (4), the student is exempt from retaking Test II. during their first exam attempt in the semester. If a student registers for the exam but does not attend or fails (receives an insufficient (1) mark), this exemption will be lost. All learning materials required for the exam (both lectures and practicals) are provided by the Department via the course's e-learning platform.

### **LITERATURE:**

**Compulsory literature: Summaries of the lectures and practices ensured by the Department. Recommended literature: Agrios GN (ed.): Plant Pathology (4th ed.), Academic Press, San Diego California, 1997.**

# **Principles of Plant Pathology**

**Study Programme: MSc in Horticultural Engineering**

**SEMESTER: 2026/27/1**

*Relevant semester of the Study Programme at MATE: 3*

**SUBJECT CODE: NVVED029N**

**ECTS Credits: 3**

## **AIM OF SUBJECT:**

**In this course, students will learn about the the pathogens groups that infect crops, their taxonomy, characteristics and properties. They will learn about the symptoms caused by pathogens, their biology, the favourable conditions leading to infection and the basics of epidemiology. The agrotechnical, biological and chemical possibilities available to prevent and control pathogens are also detailed.**

## **CONTENT:**

**1. Introduction to plant pathology, history of plant pathology, symptomatology. 2. Characteristics and classification of plant pathogenic viruses. 3. Transmission of plant pathogenic viruses. 4. Molecular characteristics of plant pathogenic viruses, possibilities for protection against them. 5. Characteristics of plant pathogenic prokaryotes (phytoplasmas, spiroplasmas, bacteria). 6. Classification of plant pathogenic bacteria and possibilities for control. 7. General characteristics of plant pathogenic fungi. 8. Characteristics and classification of plant pathogenic fungi, characteristics and taxonomy of the Plasmodiophoromycota phylum. 9. Characteristics and taxonomy of the Oomycota, Chytridiomycota, and Zygomycota phyla. 10. Characteristics and systematics of the Ascomycota phylum. 11–12. Characteristics and classification of asexually reproducing fungi. 13. Characteristics and systematics of the Basidiomycota phylum, and possibilities for defense against fungi.**

## **GRADING SYSTEM:**

### **Assessment**

**Successful completion of the practical test on basic structures of fungi (Test I.) during the teaching period, as well as a successful practical test on disease**

identification (Test II.) and a written exam during the examination period, are required.

### **Practical tests**

There will be two written tests during the semester. Test I. covers the basic structures of fungi (characterization of fungal structures), and Test II. covers diagnostics (10 diseases must be identified, defining the pathogen(s), their taxonomic status, and the signs of the disease). Learning materials required for the tests are provided by the Department on the e-learning platform.

Students who are absent from Test I. or receive an insufficient (1) mark must repeat Test I. (see above for dates or at a time agreed in advance with the class). Students are also given the opportunity to complete Test II. during the teaching period. Students with good (4), moderate (3), or sufficient (2) marks may repeat the tests to improve their grades. Assessment: with marks.

### **Requirements for semester recognition:**

Participation in practical lessons and successful completion of Test I. during the teaching period are required. Only 3 absences from practical lessons are allowed. Missed material must be made up.

### **Requirements for exam registration:**

Only students who have fulfilled the requirements for semester recognition may register for the exam at the end of the semester. The exam consists of two parts: (1) a written test (pre-exam Test II.) and (2) a written exam. If the mark of Test II. (during the teaching period) is excellent (5) or good (4), the student is exempt from retaking Test II. during their first exam attempt in the semester. If a student registers for the exam but does not attend or fails (receives an insufficient (1) mark), this exemption will be lost. All learning materials (lectures and practicals) required for the exam are provided by the Department on the e-learning platform.

### **LITERATURE:**

**Compulsory literature:** Summaries of lectures and practicals provided by the Department.

### **Recommended literature:**

- Janse, J.D. (2006): *Phytobacteriology: Principles and practice*. Cabi International, London, UK (ISBN: 978-1-84593-025-8).

**- Carlile, J.M, Watkinson, S. C., Gooday, G. W. (2001): The fungi. Academic Press, UK (ISBN: 0-12-738445-6).**

**- Agrios GN (ed.): Plant Pathology (4th ed.), Academic Press, San Diego California, 1997.**

# **Integrated Pest Management, Herbology**

**Study Programme: BSc in Horticultural Engineering**

**SEMESTER: 2026/27/1**

*Relevant semester of the Study Programme at MATE: 7*

**SUBJECT CODE: NVVED020N**

**ECTS Credits: 4**

**AIM OF SUBJECT:**

**#VALUE!**

**CONTENT:**

**#VALUE!**

**GRADING SYSTEM:**

**#VALUE!**

**LITERATURE:**

**Compulsory literature: Summaries of the lectures are provided by the Department via the subject's e-learning platform. Recommended literature: Agrios GN (ed.): Plant Pathology (4th ed.), Academic Press, San Diego California, 1997.**

# **Plant Protection Zoology**

**Study Programme: BSc in Horticultural Engineering**

**SEMESTER: 2026/27/2**

*Relevant semester of the Study Programme at MATE: 4*

**SUBJECT CODE: NVVED037N**

**ECTS Credits: 3**

## **AIM OF SUBJECT:**

**The student will learn to distinguish major pest species in their adult form or based on their damage symptoms, as well as to recognize larval and pupal forms of holometabolous insects. The student will also understand the different tactics used in horticultural pest-management programs, learn control tactics for managing pests and their advantages and limitations, gain an understanding of pest management in several model systems including grapevine, fruit, vegetable and ornamental plants.**

## **CONTENT:**

### **Lectures:**

- 1. General introduction to applied entomology, Insecticides and toxicology**
- 2. Basics of insect classification, morphology and internal anatomy**
- 3. Pest control tactics, Collecting and trapping insects**
- 4. Pests and plant protection management of apples and stone fruits**
- 5. Pests and plant protection management of berries and grape**
- 6. Pests and plant protection management of vegetables and ornamental plants**

### **Practice:**

**Damage symptoms on cultivated plants  
caused by animals**

**Orthoptera and Thysanoptera**

**Hemiptera**

**Holometabolous development; Larval and pupal types of insects**

**Lepidoptera**

**Coleoptera**

**Diptera, Hymenoptera**

**Lectures and practical unit:**

**Timeframe: 1-14. week - Tuesday, 12:00-15:15 (4x45)**

**GRADING SYSTEM:**

**Regular attendance of the practical units (with maximum 3 absences), successful completion of the two oral exams during the semester, and submission of a herbarium consisting of 25 pieces of correctly identified damage types caused by pests. Written and oral exams**

**LITERATURE:**

**Lectures and exercises will be available through an e-learning course.**

**Compulsory readings:**

**van Emden H.F. (2013): Handbook of agricultural entomology. John Wiley and Sons, Chichester, West Sussex, UK, pp. 312.**

**Recommended readings:**

**Radcliffe E.B., Hutchison W.D. and Cancelado R.E. (eds.) (2008): Integrated pest management: concepts, tactics, strategies and case studies. Cambridge University Press, Cambridge, UK, pp. 529.**

**Peshin R. and Pimentel D. (eds.) (2014): Integrated pest management Vol. 4.: Experiences with implementation, global overview. Springer, Dordrecht, The Netherlands, pp. 574.**

# **Basics of Plant Protection Zoology**

**Study Programme: MSc in Horticultural Engineering**

**SEMESTER: 2026/27/2**

*Relevant semester of the Study Programme at MATE: 3*

**SUBJECT CODE: NVVED039N**

**ECTS Credits: 3**

## **AIM OF SUBJECT:**

**The course introduces students to the fundamental concepts of agricultural entomology and pest management including basics of insect morphology, anatomy and taxonomy, pests of horticultural crops, sampling techniques, insect pest identification, plant resistance to insect pests, insecticide use and its consequences, integrated pest management and biological control.**

## **CONTENT:**

**During the semester we will cover the following topics:**

- 1. Introduction, basic concepts, microscope use**
- 2. Classification of the symptoms caused by insect and mite pests**
- 3. Insect morphology and anatomy**
- 4. General introduction to insect pests,**
- 5. Thrips as pest species, introduction to pest species**
- 6. General introduction to hemipterans (true bugs, leafhoppers, planthoppers, aphids), introduction to pest species**
- 7. Introduction to larvae and pupae of insects developing by complete metamorphosis (holometabolism)**
- 8. General introduction to lepidopterans, pest species**
- 9. General introduction to beetles, pest species**
- 10. General introduction to dipterans, pest species**
- 11. General introduction of hymenoptera, pest species**
- 12. General introduction of mites, pest species**
- 13. General introduction of nematodes, pest species**

#### **14. General introduction of land snails, pest species**

##### **GRADING SYSTEM:**

**The subject “Basics of Plant Protection Zoology” is taught in 13X2 hours of lectures and 13X2 hours of practical seminars, at the time and place according to the Neptun timetable. Students are allowed to skip three classes (lectures and practical seminars) during a semester.**

**Two midterm exams are held during the semester to review basic knowledge and diagnostic skills. Successful completion of these midterm exams is a prerequisite for the exam.**

##### **LITERATURE:**

