



HUNGARIAN UNIVERSITY OF
AGRICULTURE AND LIFE SCIENCES
INSTITUTE OF AGRONOMY

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COURSE CATALOGUE for Exchange students

2026/27 Academic year

The **Institute of Agronomy of MATE at Szent István Campus, Gödöllő** 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 Agricultural Engineering**
- **MSc in Crop Production 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 | relevant semester of the study program at MATE |
|-----------------------------|--------------|---|--------------|--|
| Agricultural Engineering | NOVTR094N | Crop Production 2 | 3 | 5 |
| | | <i>Further subjects will be announced at the beginning of the semester based on the Curricula</i> | | 1, 3, 5 |
| MASTER PROGRAMME | SUBJECT CODE | SUBJECT NAME | ECTS Credits | relevant semester of the study program at MATE |
| Crop Production Engineering | NOVTR119N | Professional Communication | 3 | 3 |
| | NOVTR047N | Integrated Crop Production 2 | 4 | 3 |
| | NOVTR026N | Plant Variety, Seed Testing and Certification | 3 | 3 |

2026/27 Spring semester

| BACHELOR PROGRAMME | SUBJECT CODE | SUBJECT NAME | ECTS Credits | relevant semester of the study program at MATE |
|-----------------------------|--------------|---|--------------|--|
| Agricultural Engineering | NOVTR018N | Biological Basis and Quality | 4 | 4 |
| | | <i>Further subjects will be announced at the beginning of the semester based on the Curricula</i> | | 2, 4, 6 |
| MASTER PROGRAMME | SUBJECT CODE | SUBJECT NAME | ECTS Credits | relevant semester of the study program at MATE |
| Crop Production Engineering | NOVTR046N | Integrated Crop Production 1 | 4 | 2 |
| | NOVTR011N | Cultivation and Use of Alternative Plants | 3 | 4 |

Crop Production 2

Study Programme: BSc in Agricultural engineering

SEMESTER: 2026/27/1

Relevant semester of the Study Programme at MATE: 5

SUBJECT CODE: NOVTR094N

ECTS Credits: 3

AIM OF SUBJECT:

a) knowledge

Comprehensive knowledge of requirements and cultivation of the main crops

Comprehensive knowledge of crop production technologies, and tillage techniques

b) attainments

Capability to cooperate in R&D project management related to crop production

Skilled professional communication

CONTENT:

1. Introduction. Sustainability

2. Seed

3. Seed processing

4. Soil

5. Cash crops

6. Wheat

7. Maize

8. Energy crops

9. Pharmaceutical crops, Organic farming

10. Alfalfa

11. Soybean

12. Test

GRADING SYSTEM:

The assessment has two steps:

1. – students should write up the production technology of a chosen field crop. Scoring: 20 points (min. 11 points) 2. – students take a written exam (Test) Scoring 80 points (min. 41 points) The student, who did not score at least 41 points by the test can take an oral exam scoring 80 points. The exam can be repeated twice orally. The five grades are 1, 2, 3, 4, 5 according to the scored points of the total 100.

LITERATURE:

Compulsory literature: Jolánkai M. (2010): General and specific crop production. SZIE, Gödöllő

Biological Basis and Quality

Study Programme: BSc in Agricultural engineering

SEMESTER: 2026/27/2

Relevant semester of the Study Programme at MATE: 4

SUBJECT CODE: NOVTR018N

ECTS Credits: 4

AIM OF SUBJECT:

The subject is the introduction to plant production technologies in relation with their biological bases, quality, yield and processing.

CONTENT:

Biological resources, Crop production output, Seed, Quality assurance, Bread making quality, Pharmaceutical quality, Oil quality, Alcohol quality, Tobacco production, Cocoa production, Fibre quality, Organic cropping

GRADING SYSTEM:

The assessment has two steps. The two steps are: 1st getting the sign of the teacher, which means the students fulfilled the obligations of the practice, and 2nd taking a written exam at the end of the semester. Without the fulfilment of the 1st step the student cannot pass to the 2nd step, which is a written exam (essay and definition test). The five grades are 1, 2, 3, 4, 5 according to the scored points of the 100 of the exam. The student, who does not have at least 51 points by the first exam, can repeat the exam twice again.

LITERATURE:

Compulsory reading: Lectures' presentations, Suggested reading: Publications from scientific/professional journals

Professional Communication

Study Programme: MSc in Crop Production Engineering

SEMESTER: 2026/27/1

Relevant semester of the Study Programme at MATE: 3

SUBJECT CODE: NOVTR119N

ECTS Credits: 3

AIM OF SUBJECT:

The task of the subject is the teaching of communication, writing, reading, behavior and norms and their mastery at the skill level.

CONTENT:

General manners, Social obligations, Oral communication, Oral cases, Written communication, Written cases, Telecommunication, Telecommunication cases, Transport and traffic, Transport cases, Coexistence, Coenosys.

GRADING SYSTEM:

Participation in the consultations is mandatory, knowledge that is essential to the knowledge of the subject is presented and will be assessed. The subject ends with a practical mark, which is based on the solution of the assigned task. It is evaluated according to the following point system: 86-100 points excellent (5) 76-85 points good (4) 61-75 points medium (3) 51-60 points are sufficient (2) Insufficient under 51 points (1)

LITERATURE:

The materials of the lectures

Integrated Crop Production 2

Study Programme: MSc in Crop Production Engineering

SEMESTER: 2026/27/1

Relevant semester of the Study Programme at MATE: 3

SUBJECT CODE: NOVTR047N

ECTS Credits: 4

AIM OF SUBJECT:

knowledge - knows the modern technologies and theories used in plant cultivation and their practical application, quality assurance requirements - knows the basic principles of sustainable production, the possible environmental effects of plant growing activities - knows, understands and applies the technical terms typical of the field of crop cultivation abilities - able to recognize and eliminate problems occurring in the process of plant production - knowing the mutual influence of the environment and plant production, he is able to make decisions with a complex approach in his work.

CONTENT:

Lecture topics:

- 1.Wheat, triticale, rye, barley, oats production
- 2.Sunflower cultivation and use for energy purposes
- 3.Maize cultivation and use for energy purposes
- 4.Crop production output
- 5.Oilseed rape cultivation and use for energy purposes
- 6.Energy crop I.
- 7.Energy crop II.
- 8.Pea and Soybean production
- 9.Alfalfa production
- 10.Root and tuber crops
- 11.Medicinal plant cultivation and use
- 12.Test

Practice topics:

Studying different energy crops and cultivation technologies in the experimental and training field.

GRADING SYSTEM:

The assessment has two parts, and a five-graded percentage score evaluation system.

·approval of course work by the course leader, and achieving the minimum scores on tests and homework presentation (50 percent)

·an oral exam at the end of the semester (50 percent)

The five grades are 1, 2, 3, 4, 5 according to the scored points of the total 100, listed below:

| | |
|------------------|----------------------|
| 5 (excellent) | 86-100 percent |
| 4 (good) | 76-85 percent |
| 3 (satisfactory) | 61-75 percent |
| 2 (pass) | 51-60 percent |
| 1 (fail) | 50 percent and below |

LITERATURE:

Compulsory reading:

M. Jolánkai (2010): General and Specific Crop Production, SZIE, Gödöllő

M. Jolánkai (2002): Crop Production, Akaprint, Budapest

Lectures' presentations

Suggested reading: Publications from scientific/professional journals

Plant Variety, Seed Testing and Certification

Study Programme: MSc in Crop Production Engineering

SEMESTER: 2026/27/1

Relevant semester of the Study Programme at MATE: 3

SUBJECT CODE: NOVTR026N

ECTS Credits: 3

AIM OF SUBJECT:

The task of the subject is to teach the examination, qualification and control of the variety and the seed.

Competencies to be acquired during the teaching of the subject knowledge – knows the modern methods used in variety and seed certification and their practical application – is familiar with international methods and regulations, as well as domestic specificities – understands the processes taking place in the qualification and the connections between them – knows, understands and applies technical terms typical of the field of variety and seed certification abilities – is able to recognize and eliminate problems occurring in the process of variety and seed testing and certification

CONTENT:

Genetic principles of the production of crop plants, Sexual reproduction, Variety registration, Seed certification, Breeders' seed production, Seed production. Practices: Seed tests, Presentations of project work. Field trips: Nébih seed testing laboratory (Budapest), Agricultural Research Institute (Martonvásár) – Nébih Central Variety Testing Station (Tordas)

GRADING SYSTEM:

1. LECTURES: At a pre-announced time, the students will write a test based on the material of the lectures (0–50 points).
2. Practices: Participation in the practices is mandatory. During the practices, the students are given an independent task, which must be completed in a manner and at a time determined by the instructor.
3. COLLOQUIUM AND FINAL ASSESSMENT 3.1. Colloquium You can apply for an oral exam on the specified exam day via the NEPTUN system. Only those who have

fulfilled the conditions for recognition of the semester may take the oral exam. The exam topics will be published in the NEPTUN system before the start of the exam period.

3.2. Creating the final result The final result is determined based on the total score (max. 100) according to the following points system: 86-100 points excellent (5) 76-85 points good (4) 61-75 points medium (3) 51-60 points are sufficient (2) Insufficient under 51 points (1) The use of non-permissible devices during the assessment will result in a failing grade.

LITERATURE:

Mandatory literature: LII of 2003. Seed Act FVM Decree 40/2004 FVM Decree 48/2004

Recommended literature: • Relevant articles from journals

Integrated Crop Production 1

Study Programme: MSc in Crop Production Engineering

SEMESTER: 2026/27/2

Relevant semester of the Study Programme at MATE: 2

SUBJECT CODE: NOVTR046N

ECTS Credits: 4

AIM OF SUBJECT:

knowledge - knows the modern technologies and theories used in plant cultivation and their practical application, quality assurance requirements - knows the basic principles of sustainable production, the possible environmental effects of plant growing activities - knows, understands and applies the technical terms typical of the field of crop cultivation abilities - able to recognize and eliminate problems occurring in the process of plant production - knowing the mutual influence of the environment and plant production, he is able to make decisions with a complex approach in his work.

CONTENT:

An introduction to crop science, The life of plants, The environment, sustainability, Cash crops, Quality of field crops, Specific crops, Grain crops, Land use, soil tillage, Plant nutrition, Plant protection, Seed production, Field crop research

GRADING SYSTEM:

The assessment has two steps. The two steps are: 1st getting the sign of the teacher, which means the students fulfilled the obligations of the practice, and 2nd taking a written exam at the end of the semester. Without the fulfilment of the 1st step the student cannot pass to the 2nd step, which is a written exam (essay and definition test). The five grades are 1, 2, 3, 4, 5 according to the scored points of the 100 of the exam. The student, who does not have at least 51 points by the first exam, can repeat the exam twice again.

LITERATURE:

M. Jolánkai (2010): General and Specific Crop Production, SZIE, Gödöllő

M. Jolánkai (2002): Crop Production, Akaprint, Budapest

Cultivation and Use of Alternative Plants

Study Programme: MSc in Crop Production Engineering

SEMESTER: 2026/27/2

Relevant semester of the Study Programme at MATE: 4

SUBJECT CODE: NOVTR011N

ECTS Credits: 3

AIM OF SUBJECT:

1. his knowledge – knows the modern technologies used in plant cultivation and their practical application – understands the processes taking place in crop production and the relationships between them – knows the environmental aspects of plant production – knows, understands and applies the technical terms typical of the field of crop cultivation 2. his abilities – With the acquired knowledge, the students will be able to plan, develop and manage the cultivation technology of the given plant species adapted to the environmental conditions.

CONTENT:

The subject presents the cultivation of plants that have recently fallen into the background, which can contribute to the promotion of proper feeding and healthy nutrition. By growing them, biodiversity can be increased, and at the same time a more favorable crop rotation can be created, but they also have an effect on the maintenance and improvement of the soil's fertility, nutrient supply, and structure. Cereals, oil and protein crops are introduced. During the lectures, the cultivation technology and use and processing possibilities of some medicinal plants will also be explained. The herbs and spices to be described are: dill, calendula, fennel, chamomile, lemongrass, mint, lavender.

GRADING SYSTEM:

Method of assessment: An offered mark can be obtained based on the presentation of a selected alternative plant and the development of its cultivation technology. If the student does not accept the offered mark, he can take an oral exam. The topics covered in the consultation are included as exam items in the

oral exam. Creating the final result The final result is determined based on the total score (max. 100) according to the following points system: 86-100 points excellent (5) 76-85 points good (4) 61-75 points medium (3) 51-60 points are sufficient (2) Insufficient under 51 points (1)

LITERATURE:

Mandatory literature: • Lecture material

Recommended literature: Related technical articles

Crop Production 1

Study Programme:

SEMESTER: 2026/27/2

Relevant semester of the Study Programme at MATE:

SUBJECT CODE: NOVTR093N

ECTS Credits:

AIM OF SUBJECT:

a) knowledge

Comprehensive knowledge of requirements and cultivation of the main crops

Comprehensive knowledge of crop production technologies, and tillage techniques

b) attainments

Capability to cooperate in R&D project management related to crop production

Skilled professional communication

CONTENT:

1. Crop production, History alimentation, FAO

2. Biological bases, breeding, selection, GMO

3. Reproductions of plants

Carbon cycle and photosynthesis. C3 and C4 type species

5. Physiological bases, Proteins, Carbohydrates, lipids.

6. Growth and development, Crop plant temporal and spatial distribution.

7. Crop production technologies I. Soil tillage, sowing.

8. Crop production technologies II. Nutrition, protection.

9. Crop production technologies III. Harvest, transport, storage processing

10. Crop site, cropping systems, crop sequences and rotations

11. Food chain, Environmental, technical and biological influences.

12. Climate changes impact, Adaptation and mitigation.

13. test

GRADING SYSTEM:

The assessment has two steps:

1. – students should write up the production technology of a chosen field crop. Scoring: 20 points (min. 11 points) 2. – students take a written exam (Test) Scoring 80 points (min. 41 points) The student, who did not score at least 41 points by the test can take an oral exam scoring 80 points. The exam can be repeated twice orally. The five grades are 1, 2, 3, 4, 5 according to the scored points of the total 100.

LITERATURE:

Compulsory reading:

Jolánkai M. (2010): General and specific crop production. SZIE, Gödöllő

Lectures' presentations

Suggested reading:

Publications from scientific/professional journal